Corrected Sequence Listing2.ST25
SEQUENCE LISTING

<110> Poustka, et al.

<120> PROTEIN (TP) THAT IS INVOLVED IN THE DEVELOPMENT OF THE NERVOUS SYSTEM

<130> 4121-129

<140> 09/914,549
<141> 2001-08-24

<150> PCT/DE00/00583
<151> 2000-02-28

<150> DE 199 08 423.8
<151> 1999-02-26

<160> 39

<170> PatentIn version 3.1

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<213> Homo sapiens

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   Arg Val Thr His Ala Ser Pro Pro Ser Glu Ala Ser Gln Ala Lys
   1   5   10   15

acc cag caa gat atg cag tcc agt ctg gca gcc aga tat gca act cag   95
Thr Gln Gln Asp Met Gln Ser Ser Leu Ala Ala Arg Tyr Ala Thr Gln
                20   25   30

tct aat cac agt gga att gca acc agt caa aaa aag cct act agg ctt   143
Ser Asn His Ser Gly Ile Ala Thr Ser Gln Lys Lys Pro Thr Arg Leu
            35   40   45

cca ggg ccc tct agg gtg cct gct gca gga agc agc agc aag gtc cag   191
Pro Gly Pro Ser Arg Val Pro Ala Ala Gly Ser Ser Ser Lys Val Gln
        50   55   60

gga gcc tct aat tta aat agg aga agt cag agc ttt aac agc att gac   239
Gly Ala Ser Asn Leu Asn Arg Arg Ser Gln Ser Phe Asn Ser Ile Asp
    65   70   75

aaa   242
Lys
80

<210> 2
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<213> Homo sapiens

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Page 1

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Arg Val Thr His Ala Ser Pro Pro Ser Glu Ala Ser Gln Ala Lys Thr
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Gln Gln Asp Met Gln Ser Ser Leu Ala Ala Arg Tyr Ala Thr Gln Ser
            20              25                  30

Asn His Ser Gly Ile Ala Thr Ser Gln Lys Lys Pro Thr Arg Leu Pro
            35              40                  45

Gly Pro Ser Arg Val Pro Ala Ala Gly Ser Ser Ser Lys Val Gln Gly
        50              55              60

Ala Ser Asn Leu Asn Arg Arg Ser Gln Ser Phe Asn Ser Ile Asp Lys
65                  70                  75                  80
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ggc act cac gag gtc cag agc ctg ctc atg aga acg ggt agt gtg aga      48
Gly Thr His Glu Val Gln Ser Leu Leu Met Arg Thr Gly Ser Val Arg
1               5                   10                  15

tct act ctc tca gaa aga tat acc cca tca tct cgg cag gcc aac caa      96
Ser Thr Leu Ser Glu Arg Tyr Thr Pro Ser Ser Arg Gln Ala Asn Gln
            20              25                  30

gaa gag ggc aaa gag tgg ttg cgt tct cat tct act gga ggg ctt cag     144
Glu Glu Gly Lys Glu Trp Leu Arg Ser His Ser Thr Gly Gly Leu Gln
            35              40                  45

gac act ggc aac cag                                                  159
Asp Thr Gly Asn Gln
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1               5                   10                  15

Ser Thr Leu Ser Glu Arg Tyr Thr Pro Ser Ser Arg Gln Ala Asn Gln
            20              25                  30
```

```
Glu Glu Gly Lys Glu Trp Leu Arg Ser His Ser Thr Gly Gly Leu Gln
        35              40              45
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Asp Thr Gly Asn Gln
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  Asp Gln Leu Arg Glu Thr Met His Asn Met Gln Leu Glu Val Asp Leu
  1               5                   10                  15
```

```
ctg aaa gca gag aat gac cga ctg aag gta gcc cca ggc ccc tca tca        97
Leu Lys Ala Glu Asn Asp Arg Leu Lys Val Ala Pro Gly Pro Ser Ser
            20              25              30
```

```
ggc tcc act cca ggg cag gtc cct gga tca tct gca tta tct tcc cca        145
Gly Ser Thr Pro Gly Gln Val Pro Gly Ser Ser Ala Leu Ser Ser Pro
        35              40              45
```

```
cgc cgc tcc cta ggc ctg gca ctc acc cat tcc ttc ggc ccc agt ctt        193
Arg Arg Ser Leu Gly Leu Ala Leu Thr His Ser Phe Gly Pro Ser Leu
        50              55              60
```

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gca gac aca gac ctg tca ccc atg gat ggc atc agt act tgt ggt cca        241
Ala Asp Thr Asp Leu Ser Pro Met Asp Gly Ile Ser Thr Cys Gly Pro
65                  70                  75                  80
```

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aag gag gaa gtg acc ctc cgg gtg gtg gtg agg atg ccc ccg cag cac        289
Lys Glu Glu Val Thr Leu Arg Val Val Val Arg Met Pro Pro Gln His
                85                  90                  95
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atc atc aaa ggg gac ttg aag cag cag gaa ttc ttc ctg ggc tgt agc        337
Ile Ile Lys Gly Asp Leu Lys Gln Gln Glu Phe Phe Leu Gly Cys Ser
            100             105             110
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```
aag gtc agt gga aaa gtt gac tgg aag atg ctg gat gaa gct gtt ttc        385
Lys Val Ser Gly Lys Val Asp Trp Lys Met Leu Asp Glu Ala Val Phe
            115             120             125
```

```
caa gtg ttc aag gac tat att tct aaa atg gac cca gcc tct acc ctg        433
Gln Val Phe Lys Asp Tyr Ile Ser Lys Met Asp Pro Ala Ser Thr Leu
        130             135             140
```

```
gga cta agc act gag tcc atc cat ggc tac agc atc agc cac gtg aaa        481
Gly Leu Ser Thr Glu Ser Ile His Gly Tyr Ser Ile Ser His Val Lys
145             150             155             160
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cga gtg ttg gat gca gag ccc ccc gag atg cct cct tgc cgt cga ggt        529
Arg Val Leu Asp Ala Glu Pro Pro Glu Met Pro Pro Cys Arg Arg Gly
            165             170             175
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gtc aat aac ata tca gtc tcc ctc aaa ggt ctg aag gag aaa tgc gtc     577
Val Asn Asn Ile Ser Val Ser Leu Lys Gly Leu Lys Glu Lys Cys Val
            180             185             190

gac agc ctg gtg ttc gag acg ctg atc ccc aag ccg atg atg cag cac     625
Asp Ser Leu Val Phe Glu Thr Leu Ile Pro Lys Pro Met Met Gln His
            195             200             205

tac ata agc ctc ctg ctg aag cac cgg cgc ctc gtc ctc tcg ggc ccc     673
Tyr Ile Ser Leu Leu Leu Lys His Arg Arg Leu Val Leu Ser Gly Pro
            210             215             220

agc ggc acg ggc aag acc tac ctg acc aat cgc ttg gcc gag tac ctg     721
Ser Gly Thr Gly Lys Thr Tyr Leu Thr Asn Arg Leu Ala Glu Tyr Leu
225             230             235             240

gtg gag cgc tct ggc cgt gag gtc aca gag ggc atc gtc agc acc ttc     769
Val Glu Arg Ser Gly Arg Glu Val Thr Glu Gly Ile Val Ser Thr Phe
            245             250             255

aac atg cac cag cag tct tgc aag gat ctg caa ctg tat ctt tcc aac     817
Asn Met His Gln Gln Ser Cys Lys Asp Leu Gln Leu Tyr Leu Ser Asn
            260             265             270

cta gcc aac cag ata gac cgg gaa aca gga att ggg gat gtg ccc ctg     865
Leu Ala Asn Gln Ile Asp Arg Glu Thr Gly Ile Gly Asp Val Pro Leu
            275             280             285

gtg att cta ttg gat gac ctg agt gaa gca ggc tcc atc agt gag ttg     913
Val Ile Leu Leu Asp Asp Leu Ser Glu Ala Gly Ser Ile Ser Glu Leu
            290             295             300

gtc aat ggg gcc ctc acc tgc aag tat cat aaa tgt ccc tat att ata     961
Val Asn Gly Ala Leu Thr Cys Lys Tyr His Lys Cys Pro Tyr Ile Ile
305             310             315             320

ggt acc acc aat cag cct gta aaa atg aca ccc aac cat ggc ttg cac    1009
Gly Thr Thr Asn Gln Pro Val Lys Met Thr Pro Asn His Gly Leu His
            325             330             335

ttg agc ttc agg atg ttg acc ttc tcc aac aac gtg gag cca gcc aat    1057
Leu Ser Phe Arg Met Leu Thr Phe Ser Asn Asn Val Glu Pro Ala Asn
            340             345             350

ggc ttc ctg gtt cgt tac ctg agg agg aag ctg gta gag tca gac agc    1105
Gly Phe Leu Val Arg Tyr Leu Arg Arg Lys Leu Val Glu Ser Asp Ser
            355             360             365

gac atc aat gcc aac aag gaa gag ctg ctt cgg gtg ctc gac tgg gta    1153
Asp Ile Asn Ala Asn Lys Glu Glu Leu Leu Arg Val Leu Asp Trp Val
            370             375             380

ccc aag ctg tgg tat cat ctc cac acc ttc ctt gag aag cac agc acc    1201
Pro Lys Leu Trp Tyr His Leu His Thr Phe Leu Glu Lys His Ser Thr
385             390             395             400

tca gac ttc ctc atc ggc cct tgc ttc ttt ctg tcg tgt ccc att ggc    1249
Ser Asp Phe Leu Ile Gly Pro Cys Phe Phe Leu Ser Cys Pro Ile Gly
            405             410             415

att gag gac ttc cgg acc tgg ttc att gac ctg tgg aac aac tct atc    1297
Ile Glu Asp Phe Arg Thr Trp Phe Ile Asp Leu Trp Asn Asn Ser Ile
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```
att ccc tat cta cag gaa gga gcc aag gat ggg ata aag gtc cat gga      1345
Ile Pro Tyr Leu Gln Glu Gly Ala Lys Asp Gly Ile Lys Val His Gly
            435                      440                      445

cag aaa gct gct tgg gag gac cca gtg gaa tgg gtc cgg gac aca ctt      1393
Gln Lys Ala Ala Trp Glu Asp Pro Val Glu Trp Val Arg Asp Thr Leu
            450                      455                      460

ccc tgg cca tca gcc caa caa gac caa tca aag ctg tac cac ctg ccc      1441
Pro Trp Pro Ser Ala Gln Gln Asp Gln Ser Lys Leu Tyr His Leu Pro
465                      470                      475                      480

cca ccc acc gtg ggc cct cac agc att gcc tca cct ccc gag gat agg      1489
Pro Pro Thr Val Gly Pro His Ser Ile Ala Ser Pro Pro Glu Asp Arg
                        485                      490                      495

aca gtc aaa gac agc acc cca agt tct ctg gac tca gat cct ctg atg      1537
Thr Val Lys Asp Ser Thr Pro Ser Ser Leu Asp Ser Asp Pro Leu Met
                500                      505                      510

gcc atg ctg ctg aaa ctt caa gaa gct gcc aac tac att gag tct cca      1585
Ala Met Leu Leu Lys Leu Gln Glu Ala Ala Asn Tyr Ile Glu Ser Pro
            515                      520                      525

gat cga gaa acc atc ctg gac ccc aac ctt cag gca aca ctt              1627
Asp Arg Glu Thr Ile Leu Asp Pro Asn Leu Gln Ala Thr Leu
            530                      535                      540

taagggttcg gcaatcactg tcacccccgg acagcagaac gctggcatca gctatcttag   1687

ctcctcctct cccctctcct ctttcagagc actggctctc cagccccagg aggagaacag   1747

gagggaggag gagatgaaag aggagggaca ggttcttggt gctgtacctt tgagaacttc   1807

ctaggaagga atggtggggt ggcgtttggg aacttgtgcc ccctaaacac atttactggc   1867

ctcctctaat gactttgggg aaaagatgat tctgggtctt tcccttgact tcttgtttca   1927

attacaaact cctgggcttt ctggggaggg gttcagaaaa catcaaaaca ctgcagcagt   1987

tcctaaatga ttctcacaag caaccctgag agagacagtc ttgtgaggga gatctggggg   2047

aggcaggaag ctcctcagat tttctcacag acccttccca attccatcac cactgccaac   2107

aactcctccc ccagagatct ggctggagcc cagaaaaaga agcatgtggt ttaaaaaatg   2167

tttaaatcaa tctgtaaaag gtaaaaatga aaaacaaaaa caagcaaaca aacaaaaaac   2227

aatggaaaag atgaagctgg agagagagga accagttgcc aaggtagaga gctgcccgct   2287

cctgccctct ggatgacata ggggacatca acaagacggc tgccaacctg agaagtcacc   2347

aaaccacaaa aataacctta cagccttcag ggaaagacta ccagctctgt ctttctaccc   2407

tctaatttaa caatgcataa gagtcaataa accctacttt tttaaaaaaa aaaa          2461
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Leu Lys Ala Glu Asn Asp Arg Leu Lys Val Ala Pro Gly Pro Ser Ser
        20   25   30

Gly Ser Thr Pro Gly Gln Val Pro Gly Ser Ser Ala Leu Ser Ser Pro
        35   40   45

Arg Arg Ser Leu Gly Leu Ala Leu Thr His Ser Phe Gly Pro Ser Leu
        50   55   60

Ala Asp Thr Asp Leu Ser Pro Met Asp Gly Ile Ser Thr Cys Gly Pro
65   70   75   80

Lys Glu Glu Val Thr Leu Arg Val Val Val Arg Met Pro Pro Gln His
            85   90   95

Ile Ile Lys Gly Asp Leu Lys Gln Gln Glu Phe Phe Leu Gly Cys Ser
        100   105   110

Lys Val Ser Gly Lys Val Asp Trp Lys Met Leu Asp Glu Ala Val Phe
        115   120   125

Gln Val Phe Lys Asp Tyr Ile Ser Lys Met Asp Pro Ala Ser Thr Leu
    130   135   140

Gly Leu Ser Thr Glu Ser Ile His Gly Tyr Ser Ile Ser His Val Lys
145   150   155   160

Arg Val Leu Asp Ala Glu Pro Pro Glu Met Pro Pro Cys Arg Arg Gly
            165   170   175

Val Asn Asn Ile Ser Val Ser Leu Lys Gly Leu Lys Glu Lys Cys Val
            180   185   190

Asp Ser Leu Val Phe Glu Thr Leu Ile Pro Lys Pro Met Met Gln His
        195   200   205

Tyr Ile Ser Leu Leu Leu Lys His Arg Arg Leu Val Leu Ser Gly Pro
    210   215   220

Ser Gly Thr Gly Lys Thr Tyr Leu Thr Asn Arg Leu Ala Glu Tyr Leu
225   230   235   240

Val Glu Arg Ser Gly Arg Glu Val Thr Glu Gly Ile Val Ser Thr Phe
           245   250   255

Asn Met His Gln Gln Ser Cys Lys Asp Leu Gln Leu Tyr Leu Ser Asn
          260   265   270

Leu Ala Asn Gln Ile Asp Arg Glu Thr Gly Ile Gly Asp Val Pro Leu
          275   280   285

Val Ile Leu Leu Asp Asp Leu Ser Glu Ala Gly Ser Ile Ser Glu Leu
   290   295   300

Val Asn Gly Ala Leu Thr Cys Lys Tyr His Lys Cys Pro Tyr Ile Ile
305   310   315   320

Gly Thr Thr Asn Gln Pro Val Lys Met Thr Pro Asn His Gly Leu His
          325   330   335

Leu Ser Phe Arg Met Leu Thr Phe Ser Asn Asn Val Glu Pro Ala Asn
          340   345   350

Gly Phe Leu Val Arg Tyr Leu Arg Arg Lys Leu Val Glu Ser Asp Ser
          355   360   365

Asp Ile Asn Ala Asn Lys Glu Glu Leu Leu Arg Val Leu Asp Trp Val
   370   375   380

Pro Lys Leu Trp Tyr His Leu His Thr Phe Leu Glu Lys His Ser Thr
385   390   395   400

Ser Asp Phe Leu Ile Gly Pro Cys Phe Phe Leu Ser Cys Pro Ile Gly
          405   410   415

Ile Glu Asp Phe Arg Thr Trp Phe Ile Asp Leu Trp Asn Asn Ser Ile
          420   425   430

Ile Pro Tyr Leu Gln Glu Gly Ala Lys Asp Gly Ile Lys Val His Gly
          435   440   445

Gln Lys Ala Ala Trp Glu Asp Pro Val Glu Trp Val Arg Asp Thr Leu
          450   455   460

Pro Trp Pro Ser Ala Gln Gln Asp Gln Ser Lys Leu Tyr His Leu Pro
465   470   475   480

Pro Pro Thr Val Gly Pro His Ser Ile Ala Ser Pro Pro Glu Asp Arg
          485   490   495

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Thr Val Lys Asp Ser Thr Pro Ser Ser Leu Asp Ser Asp Pro Leu Met
            500             505             510


Ala Met Leu Leu Lys Leu Gln Glu Ala Ala Asn Tyr Ile Glu Ser Pro
            515             520             525


Asp Arg Glu Thr Ile Leu Asp Pro Asn Leu Gln Ala Thr Leu
            530             535             540
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1               5                   10                  15

ctc aac tct gcc cac cag ctg gac cag ctt cgg gag acc atg cac aat      96
Leu Asn Ser Ala His Gln Leu Asp Gln Leu Arg Glu Thr Met His Asn
                20                  25                  30

atg cag ttg gag gtg gac ctg ctg aaa gca gag aat gac cgg ctg aag     144
Met Gln Leu Glu Val Asp Leu Leu Lys Ala Glu Asn Asp Arg Leu Lys
            35                  40                  45

gtt gcc ccc ggc ccc tcc tca ggc tgc act cca ggg cag gtc cct ggg     192
Val Ala Pro Gly Pro Ser Ser Gly Cys Thr Pro Gly Gln Val Pro Gly
        50                  55                  60

tca tcg gct ctg tcg tcc cct cga cgt tcc ctg ggc ctt gca ctc agc     240
Ser Ser Ala Leu Ser Ser Pro Arg Arg Ser Leu Gly Leu Ala Leu Ser
65                  70                  75                  80

cat cct ttc agt cct agt ctc aca gac aca gac ctc tca ccc atg gat     288
His Pro Phe Ser Pro Ser Leu Thr Asp Thr Asp Leu Ser Pro Met Asp
                85                  90                  95

ggc atc agc acc tgt ggt tca aag gaa gag gtg acc ctg cgg gtg gtg     336
Gly Ile Ser Thr Cys Gly Ser Lys Glu Glu Val Thr Leu Arg Val Val
            100                 105                 110

gtc cgg atg ccg ccc cag cac atc atc aaa ggg gac tta aag cag cag     384
Val Arg Met Pro Pro Gln His Ile Ile Lys Gly Asp Leu Lys Gln Gln
            115                 120                 125

gag ttc ttc ctg ggt tgc agc aag gtc agt ggc aaa gtt gac tgg aag     432
Glu Phe Phe Leu Gly Cys Ser Lys Val Ser Gly Lys Val Asp Trp Lys
        130                 135                 140

atg ctg gat gaa gcc gtt ttc caa gtg ttc aag gac tac att tct aaa     480
Met Leu Asp Glu Ala Val Phe Gln Val Phe Lys Asp Tyr Ile Ser Lys
145                 150                 155                 160
```

```
atg gac cca gcc tca acc ctg gga ctg agc act gag tcc ata cat ggc    528
Met Asp Pro Ala Ser Thr Leu Gly Leu Ser Thr Glu Ser Ile His Gly
                165                 170                 175

tat agc ctc agc cac gtg aaa cga gtg ctg gat gct gag ccc cca gag    576
Tyr Ser Leu Ser His Val Lys Arg Val Leu Asp Ala Glu Pro Pro Glu
                180                 185                 190

atg cct cct tgc cgc cga ggt gtc aat aac ata tca gtc gct ctc aaa    624
Met Pro Pro Cys Arg Arg Gly Val Asn Asn Ile Ser Val Ala Leu Lys
            195                 200                 205

ggt ctg aaa gag aag tgt gtc gac agc ctg gtg ttc gag acg ctt atc    672
Gly Leu Lys Glu Lys Cys Val Asp Ser Leu Val Phe Glu Thr Leu Ile
        210                 215                 220

ccc aag ccc atg atg cag cac tac atc agc ctc ctg ctc aag cac cgg    720
Pro Lys Pro Met Met Gln His Tyr Ile Ser Leu Leu Leu Lys His Arg
225                 230                 235                 240

cgc ctg gtg ctc tcc ggc ccc agt ggc acc ggc aag acc tac ttg acc    768
Arg Leu Val Leu Ser Gly Pro Ser Gly Thr Gly Lys Thr Tyr Leu Thr
                245                 250                 255

aat cgg cta gcc gag tac ctg gtg gag cgc tcc ggc cgc gag gtc acg    816
Asn Arg Leu Ala Glu Tyr Leu Val Glu Arg Ser Gly Arg Glu Val Thr
                260                 265                 270

gat ggc atc gtc agc act ttc aac atg cac cag cag tct tgc aag gat    864
Asp Gly Ile Val Ser Thr Phe Asn Met His Gln Gln Ser Cys Lys Asp
            275                 280                 285

ctg caa ctg tac ctc tcc aac cta gcc aac cag ata gac cgg gaa aca    912
Leu Gln Leu Tyr Leu Ser Asn Leu Ala Asn Gln Ile Asp Arg Glu Thr
        290                 295                 300

ggg ata ggg gat gtg ccc ttg gtg atc ctc ctg gat gat ctg agt gaa    960
Gly Ile Gly Asp Val Pro Leu Val Ile Leu Leu Asp Asp Leu Ser Glu
305                 310                 315                 320

gca ggc tcc atc agt gag ctg gtc aat ggg gcc ctc acc tgc aag tat   1008
Ala Gly Ser Ile Ser Glu Leu Val Asn Gly Ala Leu Thr Cys Lys Tyr
                325                 330                 335

cac aaa tgt ccc tac att ata ggt acc acc aat cag cct gta aaa atg   1056
His Lys Cys Pro Tyr Ile Ile Gly Thr Thr Asn Gln Pro Val Lys Met
            340                 345                 350

aca ccc aac cat ggc ttg cac ttg agc ttc agg atg ctg acc ttc tcg   1104
Thr Pro Asn His Gly Leu His Leu Ser Phe Arg Met Leu Thr Phe Ser
            355                 360                 365

aac aat gtg gaa cca gcc aat ggc ttt ctg gtc cgt tac ctg cgg agg   1152
Asn Asn Val Glu Pro Ala Asn Gly Phe Leu Val Arg Tyr Leu Arg Arg
        370                 375                 380

aag ttg gta gag tca gac agt gac gtc aat gct aac aag gaa gag ctg   1200
Lys Leu Val Glu Ser Asp Ser Asp Val Asn Ala Asn Lys Glu Glu Leu
385                 390                 395                 400

ctt cgg gtg ctg gac tgg gtg ccc aag ctg tgg tat cac ctc cac acc   1248
Leu Arg Val Leu Asp Trp Val Pro Lys Leu Trp Tyr His Leu His Thr
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                      405                    410                       415
ttc ctg gag aag cac agc acc tcg gac ttc ctc att ggc cct tgc ttc      1296
Phe Leu Glu Lys His Ser Thr Ser Asp Phe Leu Ile Gly Pro Cys Phe
            420                    425                    430

ttc ctg tcc tgt ccc att ggc atc gag gac ttc cgg acc tgg ttc att      1344
Phe Leu Ser Cys Pro Ile Gly Ile Glu Asp Phe Arg Thr Trp Phe Ile
            435                    440                    445

gac ctg tgg aac aat tcc atc atc ccc tat cta cag gaa gga gcc aag      1392
Asp Leu Trp Asn Asn Ser Ile Ile Pro Tyr Leu Gln Glu Gly Ala Lys
        450                    455                    460

gat ggg atc aag gtt cat gga cag aaa gct gct tgg gaa gac ccg gtg      1440
Asp Gly Ile Lys Val His Gly Gln Lys Ala Ala Trp Glu Asp Pro Val
465                    470                    475                    480

gaa tgg gtc cga gac act ctt ccc tgg ccg tcg gcc caa caa gac caa      1488
Glu Trp Val Arg Asp Thr Leu Pro Trp Pro Ser Ala Gln Gln Asp Gln
                485                    490                    495

tca aag ctc tac cac ctg ccc ccg cct tct gtg ggc ccc cac agc act      1536
Ser Lys Leu Tyr His Leu Pro Pro Pro Ser Val Gly Pro His Ser Thr
            500                    505                    510

gcc tca ccc ccg gag gac agg aca gtc aaa gac agc act cca aac tcc      1584
Ala Ser Pro Pro Glu Asp Arg Thr Val Lys Asp Ser Thr Pro Asn Ser
            515                    520                    525

ctc gac tca gat ccc ctg atg gcc atg cta ctg aaa ctc caa gaa gct      1632
Leu Asp Ser Asp Pro Leu Met Ala Met Leu Leu Lys Leu Gln Glu Ala
            530                    535                    540

gcc aac tac att gag tca cca gat cga gag act atc ctg gac ccc aac      1680
Ala Asn Tyr Ile Glu Ser Pro Asp Arg Glu Thr Ile Leu Asp Pro Asn
545                    550                    555                    560

ctc cag gcg aca ctc tgagggcccg gcagtcactg tcaccctgga gggcagaagg      1735
Leu Gln Ala Thr Leu
                565

ctggcttcag catcattagc tctcctctgc cctcttcctt catagctctg gctcaccagc     1795

ctcgccaaga gaacaggagg gaagaagagg gcaggaggag ggatgggttc tcggtgctga     1855

acctttgaga acttcctact aggaattgga gggggtggag tttgagaact ccgtgcccct     1915

taactacatt tgctggcctc ctcttacgac ttaggagaaa agatgattct ggtcttttct     1975

tcaagttttg tttcacctac aaactcttgg gctttctggg gagggattcg gaagatataa     2035

acagacaaac aaaaacaaac aaaccaacta cagcagttcc aagctcgttc tcacaaacac     2095

ctctgagaca gtcacatgtg ggcaaatcta agggaggcag gaagctctac agactttctt     2155

gcaaaccctt cccagttctg tcgacactgc caacaacctc cccgccagag acctggccag     2215

agccaagaaa agagaagcat gtggtttaac agaaaaacaa aacaaaacaa acaaaaaat      2275

atatgtgtaa atcaacctgt agaggtaaa aacggcaatg gaaaagatga agctggaagg      2335

aggggcccag ttgccaagat ggaacgagag ctgccagatc ttgccttctg gatgacaaga     2395
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ggggacattg caagatggct gccagtctaa aacgtcacca gaccacaaga gtaacatcac    2455

agccttcgaa gaaaggccac aagctgtctt tctgccctct aactgaacat gcatgaaaag    2515

tcaataaacc ctactttta attttaaaa aaaaaaaaaa aaaaaaaaaa aaa             2568
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<210> 8
<211> 565
<212> PRT
<213> Mouse

<400> 8

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Glu Leu Trp Glu Lys Glu Met Lys Leu Thr Asp Ile Arg Leu Glu Ala
1               5                   10                  15


Leu Asn Ser Ala His Gln Leu Asp Gln Leu Arg Glu Thr Met His Asn
            20                  25                  30


Met Gln Leu Glu Val Asp Leu Leu Lys Ala Glu Asn Asp Arg Leu Lys
        35                  40                  45


Val Ala Pro Gly Pro Ser Ser Gly Cys Thr Pro Gly Gln Val Pro Gly
    50                  55                  60


Ser Ser Ala Leu Ser Ser Pro Arg Arg Ser Leu Gly Leu Ala Leu Ser
65                  70                  75                  80


His Pro Phe Ser Pro Ser Leu Thr Asp Thr Asp Leu Ser Pro Met Asp
                85                  90                  95


Gly Ile Ser Thr Cys Gly Ser Lys Glu Glu Val Thr Leu Arg Val Val
            100                 105                 110


Val Arg Met Pro Pro Gln His Ile Ile Lys Gly Asp Leu Lys Gln Gln
        115                 120                 125


Glu Phe Phe Leu Gly Cys Ser Lys Val Ser Gly Lys Val Asp Trp Lys
    130                 135                 140


Met Leu Asp Glu Ala Val Phe Gln Val Phe Lys Asp Tyr Ile Ser Lys
145                 150                 155                 160


Met Asp Pro Ala Ser Thr Leu Gly Leu Ser Thr Glu Ser Ile His Gly
                165                 170                 175


Tyr Ser Leu Ser His Val Lys Arg Val Leu Asp Ala Glu Pro Pro Glu
            180                 185                 190
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Met Pro Pro Cys Arg Arg Gly Val Asn Asn Ile Ser Val Ala Leu Lys
     195   200   205

Gly Leu Lys Glu Lys Cys Val Asp Ser Leu Val Phe Glu Thr Leu Ile
     210   215   220

Pro Lys Pro Met Met Gln His Tyr Ile Ser Leu Leu Leu Lys His Arg
225   230   235   240

Arg Leu Val Leu Ser Gly Pro Ser Gly Thr Gly Lys Thr Tyr Leu Thr
            245   250   255

Asn Arg Leu Ala Glu Tyr Leu Val Glu Arg Ser Gly Arg Glu Val Thr
            260   265   270

Asp Gly Ile Val Ser Thr Phe Asn Met His Gln Gln Ser Cys Lys Asp
            275   280   285

Leu Gln Leu Tyr Leu Ser Asn Leu Ala Asn Gln Ile Asp Arg Glu Thr
     290   295   300

Gly Ile Gly Asp Val Pro Leu Val Ile Leu Leu Asp Asp Leu Ser Glu
305   310   315   320

Ala Gly Ser Ile Ser Glu Leu Val Asn Gly Ala Leu Thr Cys Lys Tyr
            325   330   335

His Lys Cys Pro Tyr Ile Ile Gly Thr Thr Asn Gln Pro Val Lys Met
            340   345   350

Thr Pro Asn His Gly Leu His Leu Ser Phe Arg Met Leu Thr Phe Ser
            355   360   365

Asn Asn Val Glu Pro Ala Asn Gly Phe Leu Val Arg Tyr Leu Arg Arg
     370   375   380

Lys Leu Val Glu Ser Asp Ser Asp Val Asn Ala Asn Lys Glu Glu Leu
385   390   395   400

Leu Arg Val Leu Asp Trp Val Pro Lys Leu Trp Tyr His Leu His Thr
            405   410   415

Phe Leu Glu Lys His Ser Thr Ser Asp Phe Leu Ile Gly Pro Cys Phe
            420   425   430

Phe Leu Ser Cys Pro Ile Gly Ile Glu Asp Phe Arg Thr Trp Phe Ile
     435   440   445

```
Asp Leu Trp Asn Asn Ser Ile Ile Pro Tyr Leu Gln Glu Gly Ala Lys
    450                 455                 460


Asp Gly Ile Lys Val His Gly Gln Lys Ala Ala Trp Glu Asp Pro Val
465                 470                 475                 480


Glu Trp Val Arg Asp Thr Leu Pro Trp Pro Ser Ala Gln Gln Asp Gln
                485                 490                 495


Ser Lys Leu Tyr His Leu Pro Pro Pro Ser Val Gly Pro His Ser Thr
                500                 505                 510


Ala Ser Pro Pro Glu Asp Arg Thr Val Lys Asp Ser Thr Pro Asn Ser
            515                 520                 525


Leu Asp Ser Asp Pro Leu Met Ala Met Leu Leu Lys Leu Gln Glu Ala
    530                 535                 540


Ala Asn Tyr Ile Glu Ser Pro Asp Arg Glu Thr Ile Leu Asp Pro Asn
545                 550                 555                 560


Leu Gln Ala Thr Leu
                565



<210>   9
<211>   1025
<212>   DNA
<213>   Mouse

<220>
<221>   CDS
<222>   (1)..(129)
<223>

<400>   9
cca ata gaa ctc cgg atc aag agg cag aat tcc tca gat agc atc tcc        48
Pro Ile Glu Leu Arg Ile Lys Arg Gln Asn Ser Ser Asp Ser Ile Ser
1               5                   10                  15

agc ctc aac agc atc acc agc cat tcc agc atc ggc agc agc aaa gat        96
Ser Leu Asn Ser Ile Thr Ser His Ser Ser Ile Gly Ser Ser Lys Asp
            20                  25                  30

gct gat gcc aag aag aaa aag aag aag agt tgg gtatgtaaag gcttggggat       149
Ala Asp Ala Lys Lys Lys Lys Lys Lys Ser Trp
            35                  40

cggcctgtgc taggagtcac tcaccctgtt gcagggaact gaccccttc aggatcaaca       209

aagagggtcc cttctaacag gatgccagtg ttgtgacatc tgctggggac aaaaattcac      269

taagttccca ttcctctatc cattgtctat tctccttacc accgccctgc acatataccc      329

cagcccccca ccgtccctgc atcctttata catgtctgct atcctggggc tctacctact      389
```

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gatgaggtca aatgtatttg gccgtagaag gagctgagaa aattattcat gggtgggaga    449

gtggggcatg tggagagaat ttgtaagcca agcagggtac tctagacgct cctggggctg    509

ttgctttagt ttgggtgagg aggctgtgga acgtccccat cgctccaaag cctgcttttg    569

tctggtccag aggtgggttt gttctgtgtg gtatcccccc tgtaactcta aactggcttt    629

gggtgagctt tctacaatct gtacgcaggt gtagggcact gcctgactga ctgaaaggga    689

gagtgaccca gagtgagcgt cttgtccctg tccctgctga ggagggctgg ctacagactt    749

tggcctagtg cagacaggag ccagctgtgt ggagaagcag ctgtgtgaaa tgcatgagta    809

gtgtcgctgc tgctgctgct gctgctttct tttcattgtt tttttttttt tttctttcct    869

tttatttcct tcaaaatgct gacctcaaat ccctattttt tttccaggtt tatgaggtaa    929

gaaactcggt tcctctcctc gtgctttttc tttccctttg cacaccttcg tgtttccaga    989

gcaagcacct ctcttaaaaa aaaaaaaaaa aaaaaa                             1025
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<210> 10
<211> 43
<212> PRT
<213> Mouse

<400> 10

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Pro Ile Glu Leu Arg Ile Lys Arg Gln Asn Ser Ser Asp Ser Ile Ser
1               5                   10                  15


Ser Leu Asn Ser Ile Thr Ser His Ser Ser Ile Gly Ser Ser Lys Asp
            20                  25                  30


Ala Asp Ala Lys Lys Lys Lys Lys Ser Trp
            35                  40
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<210> 11
<211> 8690
<212> DNA
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<220>
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<222> (503)..(6187)
<223>

<400> 11
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ctctcagcgg cccaagcagt ttctttctgg gtgacaagaa tgtgcctcgg ttggttttttc    60

ttttttttct ccatctcctt aagacgattt ccatagtaac ctgatcaagt ggctcaaaat    120

cgcaaacctg aggatttccg cggcccgccg gcaagacctc ggccaggttt acaggaaatc    180

tgtcattttt tattaaaatg gaaaactgtg aagaagaaa aagatagcag ttgaagtcaa    240

aattctcgga tgactatttt gcttttgagg agtcagcatt taaaaacgat atgctgattt    300
```

ggaaggtcct gggagtaaac tgcaaacttt attttttcca ttcaatcaat ggattttttta   360

atcattcctt ggagtcgatg aagttcggaa acggtgtgtg atggggaacg tggcgggcca   420

gtgtgttcct agaaattgca tcttggatta gtttgctgct tttttgaaga gattccattt   480

tgaagggcaa gaacctaatg tg atg gat tta tct tca gaa atg aac aga cat   532
                          Met Asp Leu Ser Ser Glu Met Asn Arg His
                           1   5   10

ggg aag aat cca gtg agt cac aag cta gaa gat cag aag aag att tac   580
Gly Lys Asn Pro Val Ser His Lys Leu Glu Asp Gln Lys Lys Ile Tyr
                 15   20   25

act gac tgg gcc aac cac tac cta gca aaa tca ggc cac aag cgg ctg   628
Thr Asp Trp Ala Asn His Tyr Leu Ala Lys Ser Gly His Lys Arg Leu
             30   35   40

atc aag gac ttg caa caa gac att gca gat gga gta ctc cta gca gaa   676
Ile Lys Asp Leu Gln Gln Asp Ile Ala Asp Gly Val Leu Leu Ala Glu
             45   50   55

atc atc cag att att gca aat gaa aaa gtt gaa gat atc aat gga tgt   724
Ile Ile Gln Ile Ile Ala Asn Glu Lys Val Glu Asp Ile Asn Gly Cys
     60   65   70

cct aga agt cag tct cag atg att gaa aat gtt gat gtc tgc ctt agt   772
Pro Arg Ser Gln Ser Gln Met Ile Glu Asn Val Asp Val Cys Leu Ser
75   80   85   90

ttt cta gca gcc aga ggg gta aat gtt caa ggt cta tct gct gaa gaa   820
Phe Leu Ala Ala Arg Gly Val Asn Val Gln Gly Leu Ser Ala Glu Glu
                 95   100   105

ata aga aat gga aac tta aaa gcc att cta ggg ctg ttt ttc agt tta   868
Ile Arg Asn Gly Asn Leu Lys Ala Ile Leu Gly Leu Phe Phe Ser Leu
             110   115   120

tct cgc tac aag cag caa caa cac cat caa caa cag tac tat cag tcc   916
Ser Arg Tyr Lys Gln Gln Gln His His Gln Gln Gln Tyr Tyr Gln Ser
             125   130   135

ttg gtg gaa ctt cag cag cga gtt act cac gct tcc cct cca tcg gaa   964
Leu Val Glu Leu Gln Gln Arg Val Thr His Ala Ser Pro Pro Ser Glu
     140   145   150

gcc agc cag gcc aaa acc cag caa gat atg cag tcc agg ctt cca ggg   1012
Ala Ser Gln Ala Lys Thr Gln Gln Asp Met Gln Ser Arg Leu Pro Gly
155   160   165   170

ccc tct agg gtg cct gct gca gga agc agc agc aag gtc cag gga gcc   1060
Pro Ser Arg Val Pro Ala Ala Gly Ser Ser Ser Lys Val Gln Gly Ala
             175   180   185

tct aat tta aat agg aga agt cag agc ttt aac agc att gac aaa aac   1108
Ser Asn Leu Asn Arg Arg Ser Gln Ser Phe Asn Ser Ile Asp Lys Asn
             190   195   200

aag cct cca aat tat gca aat gga aac gaa aaa ggt gaa gac cct gaa   1156
Lys Pro Pro Asn Tyr Ala Asn Gly Asn Glu Lys Gly Glu Asp Pro Glu
             205   210   215

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aca aga aga atg aga aca gtt aaa aac ata gca gac ttg agg cag aat     1204
Thr Arg Arg Met Arg Thr Val Lys Asn Ile Ala Asp Leu Arg Gln Asn
    220             225             230

tta gaa gag act atg tcc agt ctt cgt ggg act cag ata agc cac agc     1252
Leu Glu Glu Thr Met Ser Ser Leu Arg Gly Thr Gln Ile Ser His Ser
235             240             245             250

acc ctg gag aca aca ttt gac agc act gtg aca aca gaa gtt aat gga     1300
Thr Leu Glu Thr Thr Phe Asp Ser Thr Val Thr Thr Glu Val Asn Gly
            255             260             265

agg acc ata ccc aac ttg aca agt cga ccc acc ccc atg acc tgg agg     1348
Arg Thr Ile Pro Asn Leu Thr Ser Arg Pro Thr Pro Met Thr Trp Arg
            270             275             280

ttg ggc cag gca tgt ccg cga ctt cag gcg gga gat gct ccc tcc ctg     1396
Leu Gly Gln Ala Cys Pro Arg Leu Gln Ala Gly Asp Ala Pro Ser Leu
        285             290             295

ggt gct ggc tat cct cgc agt ggt acc agt cga ttc atc cac aca gac     1444
Gly Ala Gly Tyr Pro Arg Ser Gly Thr Ser Arg Phe Ile His Thr Asp
    300             305             310

ccc tcg agg ttc atg tat acc acg cct ctc cgt cga gct gct gtc tct     1492
Pro Ser Arg Phe Met Tyr Thr Thr Pro Leu Arg Arg Ala Ala Val Ser
315             320             325             330

agg ctg gga aac atg tca cag att gac atg agt gag aaa gca agc agt     1540
Arg Leu Gly Asn Met Ser Gln Ile Asp Met Ser Glu Lys Ala Ser Ser
            335             340             345

gac ctg gac atg tct tct gag gtc gat gtg ggt gga tat atg agt gat     1588
Asp Leu Asp Met Ser Ser Glu Val Asp Val Gly Gly Tyr Met Ser Asp
            350             355             360

ggt gat atc ctt ggg aaa agt ctc agg act gat gac atc aac agt ggg     1636
Gly Asp Ile Leu Gly Lys Ser Leu Arg Thr Asp Asp Ile Asn Ser Gly
        365             370             375

tac atg aca gat gga gga ctt aac cta tat act aga agt ctg aac cga     1684
Tyr Met Thr Asp Gly Gly Leu Asn Leu Tyr Thr Arg Ser Leu Asn Arg
    380             385             390

ata cca gac aca gca act tcc cgg gac atc atc cag aga ggg gtt cac     1732
Ile Pro Asp Thr Ala Thr Ser Arg Asp Ile Ile Gln Arg Gly Val His
395             400             405             410

gat gtg aca gtg gat gca gac agc tgg gat gac agc agt tca gtg agc     1780
Asp Val Thr Val Asp Ala Asp Ser Trp Asp Asp Ser Ser Ser Val Ser
            415             420             425

agt ggt ctc agt gac acc ctt gat aac atc agc act gat gac ctg aac     1828
Ser Gly Leu Ser Asp Thr Leu Asp Asn Ile Ser Thr Asp Asp Leu Asn
            430             435             440

acc aca tcc tct gtc agc tct tac tcc aac atc acc gtc ccc tct agg     1876
Thr Thr Ser Ser Val Ser Ser Tyr Ser Asn Ile Thr Val Pro Ser Arg
            445             450             455

aag aat act cag ctg agg aca gat tca gag aaa cgc tcc acc aca gac     1924
Lys Asn Thr Gln Leu Arg Thr Asp Ser Glu Lys Arg Ser Thr Thr Asp
    460             465             470
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gag acc tgg gat agt cct gag gaa ctg aaa aaa cca gaa gaa gat ttt      1972
Glu Thr Trp Asp Ser Pro Glu Glu Leu Lys Lys Pro Glu Glu Asp Phe
475             480             485             490

gac agc cat ggg gat gct ggt ggc aag tgg aag act gtg tcc tct gga      2020
Asp Ser His Gly Asp Ala Gly Gly Lys Trp Lys Thr Val Ser Ser Gly
            495             500             505

ctt cct gaa gac ccc gag aag gca ggg cag aaa gct tcc ctg tct gtt      2068
Leu Pro Glu Asp Pro Glu Lys Ala Gly Gln Lys Ala Ser Leu Ser Val
            510             515             520

tca cag aca ggt tcc tgg aga aga ggc atg tct gcc caa gga ggg gcg      2116
Ser Gln Thr Gly Ser Trp Arg Arg Gly Met Ser Ala Gln Gly Gly Ala
            525             530             535

cca tct agg cag aaa gct gga aca agt gca ctc aaa aca ccc ggg aaa      2164
Pro Ser Arg Gln Lys Ala Gly Thr Ser Ala Leu Lys Thr Pro Gly Lys
            540             545             550

acc gat gat gcc aaa gct tct gag aaa gga aaa gct ccc cta aaa gga      2212
Thr Asp Asp Ala Lys Ala Ser Glu Lys Gly Lys Ala Pro Leu Lys Gly
555             560             565             570

tca tct cta caa aga tct cct tca gat gca gga aaa agc agt gga gat      2260
Ser Ser Leu Gln Arg Ser Pro Ser Asp Ala Gly Lys Ser Ser Gly Asp
            575             580             585

gaa ggg aaa aag ccc ccc tca ggc att gga aga tcg act gcc acc agc      2308
Glu Gly Lys Lys Pro Pro Ser Gly Ile Gly Arg Ser Thr Ala Thr Ser
            590             595             600

tcc ttt ggc ttt aag aaa cca agt gga gta ggg tca tct gcc atg atc      2356
Ser Phe Gly Phe Lys Lys Pro Ser Gly Val Gly Ser Ser Ala Met Ile
            605             610             615

acc agc agt gga gca acc ata aca agt ggc tct gca aca ctg ggt aaa      2404
Thr Ser Ser Gly Ala Thr Ile Thr Ser Gly Ser Ala Thr Leu Gly Lys
            620             625             630

att cca aaa tct gct gcc att ggc ggg aag tca aat gca ggg aga aaa      2452
Ile Pro Lys Ser Ala Ala Ile Gly Gly Lys Ser Asn Ala Gly Arg Lys
635             640             645             650

acc agt ttg gac ggt tca cag aat cag gat gat gtt gtg ctg cat gtt      2500
Thr Ser Leu Asp Gly Ser Gln Asn Gln Asp Asp Val Val Leu His Val
            655             660             665

agc tca aag act acc cta caa tat cgc agc ttg ccc cgc cct tca aaa      2548
Ser Ser Lys Thr Thr Leu Gln Tyr Arg Ser Leu Pro Arg Pro Ser Lys
            670             675             680

tcc agc acc agt ggc att cct ggc cga gga ggc cac aga tcc agt acc      2596
Ser Ser Thr Ser Gly Ile Pro Gly Arg Gly Gly His Arg Ser Ser Thr
            685             690             695

agc agt att gat tcc aac gtc agc agc aag tct gct ggg gcc acc acc      2644
Ser Ser Ile Asp Ser Asn Val Ser Ser Lys Ser Ala Gly Ala Thr Thr
            700             705             710

tcg aaa ctg aga gaa cca act aaa att ggg tca ggg cgc tcg agt cct      2692
Ser Lys Leu Arg Glu Pro Thr Lys Ile Gly Ser Gly Arg Ser Ser Pro
```

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            715                   720                   725                   730
gtc acc gtc aac caa aca gac aag gaa aag gaa aaa gta gca gtc tca      2740
Val Thr Val Asn Gln Thr Asp Lys Glu Lys Glu Lys Val Ala Val Ser
                735                   740                   745

gat tca gaa agt gtt tct ttg tca ggt tcc ccc aaa tcc agc ccc acc      2788
Asp Ser Glu Ser Val Ser Leu Ser Gly Ser Pro Lys Ser Ser Pro Thr
                750                   755                   760

tct gcc agc gcc tgt ggt gca caa ggt ctc agg cag cca gga tcc aag      2836
Ser Ala Ser Ala Cys Gly Ala Gln Gly Leu Arg Gln Pro Gly Ser Lys
            765                   770                   775

tat cca gat att gcc tca ccc aca ttt cga agg ttg ttt ggt gcc aag      2884
Tyr Pro Asp Ile Ala Ser Pro Thr Phe Arg Arg Leu Phe Gly Ala Lys
            780                   785                   790

gca ggt ggc aaa tct gcc tct gca cct aat act gag ggt gtg aaa tct      2932
Ala Gly Gly Lys Ser Ala Ser Ala Pro Asn Thr Glu Gly Val Lys Ser
795                   800                   805                   810

tcc tca gta atg ccc agc cct agt acc aca tta gcg cgg caa ggc agt      2980
Ser Ser Val Met Pro Ser Pro Ser Thr Thr Leu Ala Arg Gln Gly Ser
                815                   820                   825

ctg gag tca ccg tcg tcc ggt acg ggc agc atg ggc agt gct ggt ggg      3028
Leu Glu Ser Pro Ser Ser Gly Thr Gly Ser Met Gly Ser Ala Gly Gly
                830                   835                   840

cta agc ggc agc agc agc cct ctc ttc aat aaa ccc tca gac tta act      3076
Leu Ser Gly Ser Ser Ser Pro Leu Phe Asn Lys Pro Ser Asp Leu Thr
            845                   850                   855

aca gat gtt ata agc tta agt cac tcg ttg gcc tcc agc cca gca tcg      3124
Thr Asp Val Ile Ser Leu Ser His Ser Leu Ala Ser Ser Pro Ala Ser
            860                   865                   870

gtt cac tct ttc aca tca ggt ggt ctc gtg tgg gct gcc aat atg agc      3172
Val His Ser Phe Thr Ser Gly Gly Leu Val Trp Ala Ala Asn Met Ser
875                   880                   885                   890

agt tcc tct gca ggc agc aag gat act ccg agc tac cag tcc atg act      3220
Ser Ser Ser Ala Gly Ser Lys Asp Thr Pro Ser Tyr Gln Ser Met Thr
                895                   900                   905

agc ctc cac acg agc tct gag tcc att gac ctc ccc ctc agc cat cat      3268
Ser Leu His Thr Ser Ser Glu Ser Ile Asp Leu Pro Leu Ser His His
                910                   915                   920

ggc tcc ttg tct gga ctg acc aca ggc act cac gag gtc cag agc ctg      3316
Gly Ser Leu Ser Gly Leu Thr Thr Gly Thr His Glu Val Gln Ser Leu
            925                   930                   935

ctc atg aga acg ggt agt gtg aga tct act ctc tca gaa agc atg cag      3364
Leu Met Arg Thr Gly Ser Val Arg Ser Thr Leu Ser Glu Ser Met Gln
            940                   945                   950

ctt gac aga aat aca cta ccc aaa aag gga cta aga tat acc cca tca      3412
Leu Asp Arg Asn Thr Leu Pro Lys Lys Gly Leu Arg Tyr Thr Pro Ser
955                   960                   965                   970

tct cgg cag gcc aac caa gaa gag ggc aaa gag tgg ttg cgt tct cat      3460
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        Ser Arg Gln Ala Asn Gln Glu Glu Gly Lys Glu Trp Leu Arg Ser His
                    975                 980                     985


        tct act gga ggg ctt cag gac act ggc aac cag tca cct ctg  gtt tcc      3508
        Ser Thr Gly Gly Leu Gln Asp Thr Gly Asn Gln Ser Pro Leu  Val Ser
                    990                 995                 1000


        cct tct gcc atg tca tct tct gca gct gga aaa tac cac ttt tct          3553
        Pro Ser Ala Met Ser Ser Ser Ala Ala Gly Lys Tyr His Phe Ser
                    1005                1010                1015


        aac ttg gtg agc cca aca aat ttg tct caa ttt aac ctt ccc ggg          3598
        Asn Leu Val Ser Pro Thr Asn Leu Ser Gln Phe Asn Leu Pro Gly
                    1020                1025                1030


        ccc agc atg atg cgc tca aac agc atc cca gcc caa gac tct tcc          3643
        Pro Ser Met Met Arg Ser Asn Ser Ile Pro Ala Gln Asp Ser Ser
                    1035                1040                1045


        ttc gat ctc tat gat gac tcc cag ctt tgt ggg agt gcc act tct          3688
        Phe Asp Leu Tyr Asp Asp Ser Gln Leu Cys Gly Ser Ala Thr Ser
                    1050                1055                1060


        ctg gag gaa aga cct cgt gcc atc agt cat tcg ggc tca ttc aga          3733
        Leu Glu Glu Arg Pro Arg Ala Ile Ser His Ser Gly Ser Phe Arg
                    1065                1070                1075


        gac agc atg gaa gaa gtt cat ggc tct tca tta tca ctg gtg tcc          3778
        Asp Ser Met Glu Glu Val His Gly Ser Ser Leu Ser Leu Val Ser
                    1080                1085                1090


        agc act tct tct ctt tac tct aca gct gaa gaa aag gct cat tca          3823
        Ser Thr Ser Ser Leu Tyr Ser Thr Ala Glu Glu Lys Ala His Ser
                    1095                1100                1105


        gag caa atc cat aaa ctg cgg aga gag ctg gtt gca tca caa gaa          3868
        Glu Gln Ile His Lys Leu Arg Arg Glu Leu Val Ala Ser Gln Glu
                    1110                1115                1120


        aaa gtt gct acc ctc aca tct cag ctt tca gca aat gct cac ctt          3913
        Lys Val Ala Thr Leu Thr Ser Gln Leu Ser Ala Asn Ala His Leu
                    1125                1130                1135


        gta gca gct ttt gaa aag agc tta ggg aat atg act ggc cga ttg          3958
        Val Ala Ala Phe Glu Lys Ser Leu Gly Asn Met Thr Gly Arg Leu
                    1140                1145                1150


        caa agt cta act atg aca gcg gaa caa aag gaa tct gaa ctt ata          4003
        Gln Ser Leu Thr Met Thr Ala Glu Gln Lys Glu Ser Glu Leu Ile
                    1155                1160                1165


        gaa cta aga gaa acc att gaa atg ctg aag gct cag aat tct gct          4048
        Glu Leu Arg Glu Thr Ile Glu Met Leu Lys Ala Gln Asn Ser Ala
                    1170                1175                1180


        gcc cag gcg gct att cag gga gca ctg aat ggt cca gac cat cct          4093
        Ala Gln Ala Ala Ile Gln Gly Ala Leu Asn Gly Pro Asp His Pro
                    1185                1190                1195


        ccc aaa gat ctt cgc atc aga aga cag cat tcc tct gaa agt gtt          4138
        Pro Lys Asp Leu Arg Ile Arg Arg Gln His Ser Ser Glu Ser Val
                    1200                1205                1210
```

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tct agt atc  aac agt gcc  aca agc  cat tcc agt  att ggc  agt ggt      4183
Ser Ser Ile  Asn Ser Ala  Thr Ser  His Ser Ser  Ile Gly  Ser Gly
        1215              1220              1225

aat gat gcc  gac tcc aag  aag aag  aaa aag aaa  aac tgg  ctg aga      4228
Asn Asp Ala  Asp Ser Lys  Lys Lys  Lys Lys Lys  Asn Trp  Leu Arg
        1230              1235              1240

agt tct ttc  aaa caa gcc  ttt ggg  aag aaa aag  tcc acc  aag cct      4273
Ser Ser Phe  Lys Gln Ala  Phe Gly  Lys Lys Lys  Ser Thr  Lys Pro
        1245              1250              1255

cct tca tca  cat tct gac  att gaa  gag ctt act  gat tca  tcc ctt      4318
Pro Ser Ser  His Ser Asp  Ile Glu  Glu Leu Thr  Asp Ser  Ser Leu
        1260              1265              1270

ccg gca tcc  ccc aag tta  ccc cat  aat gct ggt  gac tgt  ggc tca      4363
Pro Ala Ser  Pro Lys Leu  Pro His  Asn Ala Gly  Asp Cys  Gly Ser
        1275              1280              1285

gca tcc atg  aag ccc tca  caa tct  gct tca gcg  atc tgt  gaa tgc      4408
Ala Ser Met  Lys Pro Ser  Gln Ser  Ala Ser Ala  Ile Cys  Glu Cys
        1290              1295              1300

aca gaa gct  gag gca gag  ata att  ctg cag ctg  aag agc  gag ctc      4453
Thr Glu Ala  Glu Ala Glu  Ile Ile  Leu Gln Leu  Lys Ser  Glu Leu
        1305              1310              1315

aga gaa aag  gaa tta aaa  tta acg  gat att cgg  ctg gag  gcc ctc      4498
Arg Glu Lys  Glu Leu Lys  Leu Thr  Asp Ile Arg  Leu Glu  Ala Leu
        1320              1325              1330

agc tct gct  cat cat ctt  gat cag  atc cgg gaa  gcc atg  aac cgg      4543
Ser Ser Ala  His His Leu  Asp Gln  Ile Arg Glu  Ala Met  Asn Arg
        1335              1340              1345

atg cag aat  gaa att gaa  ata ctg  aaa gct gaa  aat gac  cgg ttg      4588
Met Gln Asn  Glu Ile Glu  Ile Leu  Lys Ala Glu  Asn Asp  Arg Leu
        1350              1355              1360

aag gca gaa  act ggt aac  aca gct  aag cct act  cgg cca  ccg tca      4633
Lys Ala Glu  Thr Gly Asn  Thr Ala  Lys Pro Thr  Arg Pro  Pro Ser
        1365              1370              1375

gaa tcc tca  agc agc acc  tcc tct  tca tct tcc  agg cag  tca tta      4678
Glu Ser Ser  Ser Ser Thr  Ser Ser  Ser Ser Ser  Arg Gln  Ser Leu
        1380              1385              1390

gga ctt tct  cta aac aat  ttg aac  atc aca gag  gct gtt  agc tca      4723
Gly Leu Ser  Leu Asn Asn  Leu Asn  Ile Thr Glu  Ala Val  Ser Ser
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gat att ttg  cta gat gat  gct ggt  gat gca act  gga cat  aaa gat      4768
Asp Ile Leu  Leu Asp Asp  Ala Gly  Asp Ala Thr  Gly His  Lys Asp
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ggc cgc agt  gtg aaa att  ata gtc  tcc ata agc  aag ggc  tat ggt      4813
Gly Arg Ser  Val Lys Ile  Ile Val  Ser Ile Ser  Lys Gly  Tyr Gly
        1425              1430              1435

cga gca aag  gac caa aaa  tct cag  gca tat ttg  ata gga  tcc att      4858
Arg Ala Lys  Asp Gln Lys  Ser Gln  Ala Tyr Leu  Ile Gly  Ser Ile
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Gly Val Ser  Gly Lys Thr Lys Trp  Asp Val Leu Asp Gly  Val Ile
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aga cgt ctc  ttt aag gaa tat gta  ttc cga att gat aca  tcc act        4948
Arg Arg Leu  Phe Lys Glu Tyr Val  Phe Arg Ile Asp Thr  Ser Thr
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Ser Leu Gly  Leu Ser Ser Asp Cys  Ile Ala Ser Tyr Cys  Ile Gly
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gac tta att  aga tcc cat aac cta  gaa gtg cct gaa ttg  ctg cct        5038
Asp Leu Ile  Arg Ser His Asn Leu  Glu Val Pro Glu Leu  Leu Pro
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tgt gga tac  ctt gtt gga gat aat  aac atc atc act gtg  aac ctc        5083
Cys Gly Tyr  Leu Val Gly Asp Asn  Asn Ile Ile Thr Val  Asn Leu
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aaa ggg gta  gaa gaa aat agt ttg  gac agt ttt gtt ttt  gat acg        5128
Lys Gly Val  Glu Glu Asn Ser Leu  Asp Ser Phe Val Phe  Asp Thr
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Leu Ile Pro  Lys Pro Ile Thr Gln  Arg Tyr Phe Asn Leu  Leu Met
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gag cat cac  aga att ata ctc tca  gga ccg agt ggt act  gga aag        5218
Glu His His  Arg Ile Ile Leu Ser  Gly Pro Ser Gly Thr  Gly Lys
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acc tat ttg  gca aac aaa ctt gct  gaa tat gta ata acc  aaa tct        5263
Thr Tyr Leu  Ala Asn Lys Leu Ala  Glu Tyr Val Ile Thr  Lys Ser
        1575              1580               1585

gga agg aaa  aaa aca gag gat gca  att gcc act ttt aat  gtg gac        5308
Gly Arg Lys  Lys Thr Glu Asp Ala  Ile Ala Thr Phe Asn  Val Asp
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cac aag tca  agt aag gaa ttg caa  caa tat cta gct aac  ctg gct        5353
His Lys Ser  Ser Lys Glu Leu Gln  Gln Tyr Leu Ala Asn  Leu Ala
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gaa cag tgc  agt gct gat aat aat  gga gtg gag ctc cca  gtt gta        5398
Glu Gln Cys  Ser Ala Asp Asn Asn  Gly Val Glu Leu Pro  Val Val
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ata att ctt  gat aat ctt cat cat  gtg ggc tct ctg agt  gat atc        5443
Ile Ile Leu  Asp Asn Leu His His  Val Gly Ser Leu Ser  Asp Ile
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ttc aat ggt  ttt ctc aat tgt aaa  tac aac aaa tgt cca  tat att        5488
Phe Asn Gly  Phe Leu Asn Cys Lys  Tyr Asn Lys Cys Pro  Tyr Ile
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att gga aca  atg aat cag gga gtt  tct tca tca cca aat  cta gag        5533
Ile Gly Thr  Met Asn Gln Gly Val  Ser Ser Ser Pro Asn  Leu Glu
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ctg cat cac  aat ttc agg tgg gta  tta tgt gca aat cat  aca gaa        5578
Leu His His  Asn Phe Arg Trp Val  Leu Cys Ala Asn His  Thr Glu
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Glu Ile Glu  Ile Glu Arg Asn Ile  Arg Asn Asn Asp Leu  Val Lys
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Ile Ile Asp  Trp Ile Pro Lys Thr  Trp His His Leu Asn  Ser Phe
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Leu Glu Thr  His Ser Ser Ser Asp  Val Thr Ile Gly Pro  Arg Leu
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Phe Leu Pro  Cys Pro Met Asp Val  Glu Gly Ser Arg Val  Trp Phe
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Met Asp Leu  Trp Asn Tyr Ser Leu  Val Pro Tyr Ile Leu  Glu Ala
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Asp Pro Ser  Lys Trp Val Leu Asp  Thr Tyr Pro Trp Ser  Ser Ala
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act ctg cct  cag gag agc cca gcc  tta ctt cag ctg cga  cca gaa     5983
Thr Leu Pro  Gln Glu Ser Pro Ala  Leu Leu Gln Leu Arg  Pro Glu
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Asp Val Gly  Tyr Glu Ser Cys Thr  Ser Thr Lys Glu Ala  Thr Thr
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Ser Lys His  Ile Pro Gln Thr Asp  Thr Glu Gly Asp Pro  Leu Met
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Asn Met Leu  Met Lys Leu Gln Glu  Ala Ala Asn Tyr Ser  Ser Thr
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Gln Ser Cys  Asp Ser Glu Ser Thr  Ser His His Glu Asp  Ile Leu
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Asp Ser Ser  Leu Glu Ser Thr Leu
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Tyr Leu Ala Lys Ser Gly His Lys Arg Leu Ile Lys Asp Leu Gln Gln
        35                  40                  45


Asp Ile Ala Asp Gly Val Leu Leu Ala Glu Ile Ile Gln Ile Ile Ala
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Asn Glu Lys Val Glu Asp Ile Asn Gly Cys Pro Arg Ser Gln Ser Gln
65                  70                  75                  80


Met Ile Glu Asn Val Asp Val Cys Leu Ser Phe Leu Ala Ala Arg Gly
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Val Asn Val Gln Gly Leu Ser Ala Glu Glu Ile Arg Asn Gly Asn Leu
            100                 105                 110


Lys Ala Ile Leu Gly Leu Phe Phe Ser Leu Ser Arg Tyr Lys Gln Gln
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Gln His His Gln Gln Gln Tyr Tyr Gln Ser Leu Val Glu Leu Gln Gln
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Arg Val Thr His Ala Ser Pro Pro Ser Glu Ala Ser Gln Ala Lys Thr
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Gln Gln Asp Met Gln Ser Arg Leu Pro Gly Pro Ser Arg Val Pro Ala
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Ala Gly Ser Ser Ser Lys Val Gln Gly Ala Ser Asn Leu Asn Arg Arg
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Ser Gln Ser Phe Asn Ser Ile Asp Lys Asn Lys Pro Pro Asn Tyr Ala
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Asn Gly Asn Glu Lys Gly Glu Asp Pro Glu Thr Arg Arg Met Arg Thr
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Val Lys Asn Ile Ala Asp Leu Arg Gln Asn Leu Glu Glu Thr Met Ser
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Ser Leu Arg Gly Thr Gln Ile Ser His Ser Thr Leu Glu Thr Thr Phe
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Asp Ser Thr Val Thr Thr Glu Val Asn Gly Arg Thr Ile Pro Asn Leu
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Thr Ser Arg Pro Thr Pro Met Thr Trp Arg Leu Gly Gln Ala Cys Pro
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Arg Leu Gln Ala Gly Asp Ala Pro Ser Leu Gly Ala Gly Tyr Pro Arg
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Ser Gly Thr Ser Arg Phe Ile His Thr Asp Pro Ser Arg Phe Met Tyr
305   310   315   320

Thr Thr Pro Leu Arg Arg Ala Ala Val Ser Arg Leu Gly Asn Met Ser
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Gln Ile Asp Met Ser Glu Lys Ala Ser Ser Asp Leu Asp Met Ser Ser
            340   345   350

Glu Val Asp Val Gly Gly Tyr Met Ser Asp Gly Asp Ile Leu Gly Lys
            355   360   365

Ser Leu Arg Thr Asp Asp Ile Asn Ser Gly Tyr Met Thr Asp Gly Gly
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Leu Asn Leu Tyr Thr Arg Ser Leu Asn Arg Ile Pro Asp Thr Ala Thr
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Ser Arg Asp Ile Ile Gln Arg Gly Val His Asp Val Thr Val Asp Ala
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Asp Ser Trp Asp Asp Ser Ser Ser Val Ser Ser Gly Leu Ser Asp Thr
            420   425   430

Leu Asp Asn Ile Ser Thr Asp Asp Leu Asn Thr Thr Ser Ser Val Ser
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Ser Tyr Ser Asn Ile Thr Val Pro Ser Arg Lys Asn Thr Gln Leu Arg
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Thr Asp Ser Glu Lys Arg Ser Thr Thr Asp Glu Thr Trp Asp Ser Pro
465   470   475   480

Glu Glu Leu Lys Lys Pro Glu Glu Asp Phe Asp Ser His Gly Asp Ala
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Gly Gly Lys Trp Lys Thr Val Ser Ser Gly Leu Pro Glu Asp Pro Glu
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Lys Ala Gly Gln Lys Ala Ser Leu Ser Val Ser Gln Thr Gly Ser Trp
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Arg Arg Gly Met Ser Ala Gln Gly Gly Ala Pro Ser Arg Gln Lys Ala
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Gly Thr Ser Ala Leu Lys Thr Pro Gly Lys Thr Asp Asp Ala Lys Ala
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Ser Glu Lys Gly Lys Ala Pro Leu Lys Gly Ser Ser Leu Gln Arg Ser
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Pro Ser Asp Ala Gly Lys Ser Ser Gly Asp Glu Gly Lys Lys Pro Pro
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Ser Gly Ile Gly Arg Ser Thr Ala Thr Ser Ser Phe Gly Phe Lys Lys
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Pro Ser Gly Val Gly Ser Ser Ala Met Ile Thr Ser Ser Gly Ala Thr
    610   615   620

Ile Thr Ser Gly Ser Ala Thr Leu Gly Lys Ile Pro Lys Ser Ala Ala
625   630   635   640

Ile Gly Gly Lys Ser Asn Ala Gly Arg Lys Thr Ser Leu Asp Gly Ser
            645   650   655

Gln Asn Gln Asp Asp Val Val Leu His Val Ser Ser Lys Thr Thr Leu
                            Page 26

                                          660   665   670

Gln Tyr Arg Ser Leu Pro Arg Pro Ser Lys Ser Ser Thr Ser Gly Ile
            675   680   685

Pro Gly Arg Gly Gly His Arg Ser Ser Thr Ser Ser Ile Asp Ser Asn
    690   695   700

Val Ser Ser Lys Ser Ala Gly Ala Thr Thr Ser Lys Leu Arg Glu Pro
705   710   715   720

Thr Lys Ile Gly Ser Gly Arg Ser Ser Pro Val Thr Val Asn Gln Thr
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Asp Lys Glu Lys Glu Lys Val Ala Val Ser Asp Ser Glu Ser Val Ser
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Ala Gln Gly Leu Arg Gln Pro Gly Ser Lys Tyr Pro Asp Ile Ala Ser
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Pro Thr Phe Arg Arg Leu Phe Gly Ala Lys Ala Gly Gly Lys Ser Ala
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Pro Ser Thr Thr Leu Ala Arg Gln Gly Ser Leu Glu Ser Pro Ser Ser
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Gly Thr Gly Ser Met Gly Ser Ala Gly Gly Leu Ser Gly Ser Ser Ser
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Pro Leu Phe Asn Lys Pro Ser Asp Leu Thr Thr Asp Val Ile Ser Leu
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Ser His Ser Leu Ala Ser Ser Pro Ala Ser Val His Ser Phe Thr Ser
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Gly Gly Leu Val Trp Ala Ala Asn Met Ser Ser Ser Ser Ala Gly Ser
            885   890   895

Lys Asp Thr Pro Ser Tyr Gln Ser Met Thr Ser Leu His Thr Ser Ser
            900   905   910

Glu Ser Ile Asp Leu Pro Leu Ser His His Gly Ser Leu Ser Gly Leu
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Thr Thr Gly Thr His Glu Val Gln Ser Leu Leu Met Arg Thr Gly Ser
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Val Arg Ser Thr Leu Ser Glu Ser Met Gln Leu Asp Arg Asn Thr Leu
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Pro Lys Lys Gly Leu Arg Tyr Thr Pro Ser Ser Arg Gln Ala Asn Gln
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Glu Glu Gly Lys Glu Trp Leu Arg Ser His Ser Thr Gly Gly Leu Gln
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Asp Thr Gly Asn Gln Ser Pro Leu Val Ser Pro Ser Ala Met Ser Ser
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Ser Ala Ala Gly Lys Tyr His Phe Ser Asn Leu Val Ser Pro Thr
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Asn Leu Ser Gln Phe Asn Leu Pro Gly Pro Ser Met Met Arg Ser
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Asn Ser Ile Pro Ala Gln Asp Ser Ser Phe Asp Leu Tyr Asp Asp
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Ser Gln Leu Cys Gly Ser Ala Thr Ser Leu Glu Glu Arg Pro Arg
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Ala Ile Ser His Ser Gly Ser Phe Arg Asp Ser Met Glu Glu Val
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His Gly Ser Ser Leu Ser Leu Val Ser Ser Thr Ser Ser Leu Tyr
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Ser Thr Ala Glu Glu Lys Ala His Ser Glu Gln Ile His Lys Leu
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Arg Arg Glu Leu Val Ala Ser Gln Glu Lys Val Ala Thr Leu Thr
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Ser Gln Leu Ser Ala Asn Ala His Leu Val Ala Ala Phe Glu Lys
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Ser Leu Gly Asn Met Thr Gly Arg Leu Gln Ser Leu Thr Met Thr
    1145   1150   1155

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Ala Glu Gln Lys Glu Ser Glu Leu Ile Glu Leu Arg Glu Thr Ile
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Glu Met Leu Lys Ala Gln Asn Ser Ala Ala Gln Ala Ala Ile Gln
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Lys Lys Lys Lys Lys Asn Trp Leu Arg Ser Ser Phe Lys Gln Ala
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Phe Gly Lys Lys Lys Ser Thr Lys Pro Pro Ser Ser His Ser Asp
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Ile Glu Glu Leu Thr Asp Ser Ser Leu Pro Ala Ser Pro Lys Leu
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Asp Gln Ile Arg Glu Ala Met Asn Arg Met Gln Asn Glu Ile Glu
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Tyr Val Phe Arg Ile Asp Thr Ser Thr Ser Leu Gly Leu Ser Ser
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Asn Asn Gly Val Glu Leu Pro Val Val Ile Ile Leu Asp Asn Leu
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Val Asn Gly Arg Ala Ile Pro Asn Leu Thr Ser Arg Pro Ser Pro Met
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acc tgg aga ctg ggt caa gcg tgc cct cgt cta cag gct gga gat gcc    145
Thr Trp Arg Leu Gly Gln Ala Cys Pro Arg Leu Gln Ala Gly Asp Ala
        35                  40                  45

ccc tcc atg ggc gct gga tat tct cga agc ggt acc agc cga ttc atc    193
Pro Ser Met Gly Ala Gly Tyr Ser Arg Ser Gly Thr Ser Arg Phe Ile
        50                  55                  60

cac acg gat ccc tcc agg ttt atg tat acc acg cct ctc cgc cga gct    241
His Thr Asp Pro Ser Arg Phe Met Tyr Thr Thr Pro Leu Arg Arg Ala
65                  70                  75                  80

gct gtc tcg cgt ctg gga aac atg tca caa ata gat atg agc gag aaa    289
Ala Val Ser Arg Leu Gly Asn Met Ser Gln Ile Asp Met Ser Glu Lys
            85                  90                  95

gca agc agt gac ctg gat gtg tct tct gaa gtg gat gtt ggt gga tac    337
Ala Ser Ser Asp Leu Asp Val Ser Ser Glu Val Asp Val Gly Gly Tyr
                100                 105                 110

atg agc gat ggt gat atc ctt ggg aag agt ctg aga gcg gat gat atc    385
Met Ser Asp Gly Asp Ile Leu Gly Lys Ser Leu Arg Ala Asp Asp Ile
            115                 120                 125

aac agt ggg tac atg aca gat ggt ggg ctc aac cta tat acc aga agt    433
Asn Ser Gly Tyr Met Thr Asp Gly Gly Leu Asn Leu Tyr Thr Arg Ser
            130                 135                 140

ctt aac cga gtc ccg gac aca gca act tcc aga gat gtc ata cag aga    481
Leu Asn Arg Val Pro Asp Thr Ala Thr Ser Arg Asp Val Ile Gln Arg
145                 150                 155                 160

ggc gtt cac gat gtg aca gtg gac gca gac agc tgg gat gac agc agt    529
Gly Val His Asp Val Thr Val Asp Ala Asp Ser Trp Asp Asp Ser Ser
                165                 170                 175

tct gtg agc agt ggc ctc agt gac aca ctt gat aac att agc aca gat    577
Ser Val Ser Ser Gly Leu Ser Asp Thr Leu Asp Asn Ile Ser Thr Asp
            180                 185                 190

gac ctc aac acc acg tcc tcc atc agt tct tac tcc aac atc act gtc    625
Asp Leu Asn Thr Thr Ser Ser Ile Ser Ser Tyr Ser Asn Ile Thr Val
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ccc tcc agg aag aac act cag ctg aaa aca gat gcg gag aaa cgt tcg    673
Pro Ser Arg Lys Asn Thr Gln Leu Lys Thr Asp Ala Glu Lys Arg Ser
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aca aca gat gag acc tgg gat agt cct gag gag ctg aag aaa gcc gag    721
Thr Thr Asp Glu Thr Trp Asp Ser Pro Glu Glu Leu Lys Lys Ala Glu
225                 230                 235                 240

gga gat tgt gac agc cat ggt gac gga gcc gcc aag tgg aag ggt gct    769
Gly Asp Cys Asp Ser His Gly Asp Gly Ala Ala Lys Trp Lys Gly Ala
            245                 250                 255

act tct gga ctt gct gaa gac tcg gag aag aca ggg cag aaa gcc agc    817
Thr Ser Gly Leu Ala Glu Asp Ser Glu Lys Thr Gly Gln Lys Ala Ser
        260                 265                 270
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ctg tct gtg tct cag aca ggc tcc tgg agg aga ggc atg tct gcc cag        865
Leu Ser Val Ser Gln Thr Gly Ser Trp Arg Arg Gly Met Ser Ala Gln
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gga gga act cca gct aca gct agg cag aaa acc agc aca agt gca ctc        913
Gly Gly Thr Pro Ala Thr Ala Arg Gln Lys Thr Ser Thr Ser Ala Leu
        290                 295                 300

aag acc cct ggg aag aca gat gat gcc aaa gct tcc gag aaa ggg aaa        961
Lys Thr Pro Gly Lys Thr Asp Asp Ala Lys Ala Ser Glu Lys Gly Lys
305                 310                 315                 320

act cct ctc aaa gga tca tcc ttg caa agg tct cct tca gat gca ggg       1009
Thr Pro Leu Lys Gly Ser Ser Leu Gln Arg Ser Pro Ser Asp Ala Gly
                325                 330                 335

aaa agc agc ggg gat gaa ggg aaa aag cca ccg tca ggc att gga aga       1057
Lys Ser Ser Gly Asp Glu Gly Lys Lys Pro Pro Ser Gly Ile Gly Arg
                340                 345                 350

tcg aca gcc agc agt tct ttt gga tac aag aag cca agt ggt gta ggg       1105
Ser Thr Ala Ser Ser Ser Phe Gly Tyr Lys Lys Pro Ser Gly Val Gly
                355                 360                 365

gct tcc act atg att acc agc agc ggt gcc acc atc aca agc ggt tca       1153
Ala Ser Thr Met Ile Thr Ser Ser Gly Ala Thr Ile Thr Ser Gly Ser
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gct aca ctg ggg aaa atc ccc aaa tcc gct gcc att ggt ggg aag tcc       1201
Ala Thr Leu Gly Lys Ile Pro Lys Ser Ala Ala Ile Gly Gly Lys Ser
385                 390                 395                 400

aat gca gga agg aaa acc agc ctg gac ggg tcc cag aat caa gat gat       1249
Asn Ala Gly Arg Lys Thr Ser Leu Asp Gly Ser Gln Asn Gln Asp Asp
                405                 410                 415

gtt gtc ctg cac gtg agc tcg aag acc acc ctc cag tac cgt agt ttg       1297
Val Val Leu His Val Ser Ser Lys Thr Thr Leu Gln Tyr Arg Ser Leu
                420                 425                 430

ccc cgc cct tct aag tcc agc acc agc gga atc cct ggg aga ggt ggc       1345
Pro Arg Pro Ser Lys Ser Ser Thr Ser Gly Ile Pro Gly Arg Gly Gly
                435                 440                 445

cac agg tcg agc acc agc agc att gat tcc aat gtc agc agc aag tca       1393
His Arg Ser Ser Thr Ser Ser Ile Asp Ser Asn Val Ser Ser Lys Ser
                450                 455                 460

gct ggg gcc acc acc tcc aaa ctg aga gaa ccg act aag atc ggc tca       1441
Ala Gly Ala Thr Thr Ser Lys Leu Arg Glu Pro Thr Lys Ile Gly Ser
465                 470                 475                 480

ggg cgc tcg agt cca gtc act gtc aac caa aca gac aaa gag aag gag       1489
Gly Arg Ser Ser Pro Val Thr Val Asn Gln Thr Asp Lys Glu Lys Glu
                485                 490                 495

aaa gta gca gtg tca gat tca gag agc gtt tcc ttg tca ggt tcc ccc       1537
Lys Val Ala Val Ser Asp Ser Glu Ser Val Ser Leu Ser Gly Ser Pro
                500                 505                 510

aaa tcc agc ccc acc tct gcc agt gcc tgt ggg act caa ggg ctc aga       1585
Lys Ser Ser Pro Thr Ser Ala Ser Ala Cys Gly Thr Gln Gly Leu Arg
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              515                     520                          525

cag cca ggg tcc aaa tat cca gat att gcc tcg ccc aca ttt cga agg      1633
Gln Pro Gly Ser Lys Tyr Pro Asp Ile Ala Ser Pro Thr Phe Arg Arg
        530                     535                     540

ttg ttc ggt gcc aag gca ggc ggc aaa tct gcc tcc gca cct aat act      1681
Leu Phe Gly Ala Lys Ala Gly Gly Lys Ser Ala Ser Ala Pro Asn Thr
545                     550                     555                 560

gag ggg gcg aag tcc tcc tca gta gtg ctc agc cct agt acc tct tta      1729
Glu Gly Ala Lys Ser Ser Ser Val Val Leu Ser Pro Ser Thr Ser Leu
                    565                     570                 575

gcc cga caa ggc agt ctg gag tca ccg tcg tcc ggt acg gga agc atg      1777
Ala Arg Gln Gly Ser Leu Glu Ser Pro Ser Ser Gly Thr Gly Ser Met
                580                     585                 590

ggc agt gct ggt ggg ctg agt ggc agc agc agc cct ctc ttc aat aaa      1825
Gly Ser Ala Gly Gly Leu Ser Gly Ser Ser Ser Pro Leu Phe Asn Lys
            595                     600                 605

ccc tca gac cta act aca gat gtt ata agc tta agt cac tcc ttg gct      1873
Pro Ser Asp Leu Thr Thr Asp Val Ile Ser Leu Ser His Ser Leu Ala
        610                     615                 620

tcc agc cca gcg tcg gtt cac tct ttc aca tcc ggt ggg ctt gtg tgg      1921
Ser Ser Pro Ala Ser Val His Ser Phe Thr Ser Gly Gly Leu Val Trp
625                     630                     635                 640

gct gcc aat ctg agc agt tcc tct gcc ggc agc aag gac act cca agt      1969
Ala Ala Asn Leu Ser Ser Ser Ser Ala Gly Ser Lys Asp Thr Pro Ser
                    645                     650                 655

tac cag tcc atg act agt ctc cat acg agc tct gag tcc att gac ctg      2017
Tyr Gln Ser Met Thr Ser Leu His Thr Ser Ser Glu Ser Ile Asp Leu
                660                     665                 670

ccc ctc agc cat cat ggc tcc ctg tct gga ctg acc aca ggc act cac      2065
Pro Leu Ser His His Gly Ser Leu Ser Gly Leu Thr Thr Gly Thr His
            675                     680                 685

gag gtg cag agc ctg ctc atg aga acg ggt agt gtg aga tct act ctc      2113
Glu Val Gln Ser Leu Leu Met Arg Thr Gly Ser Val Arg Ser Thr Leu
    690                     695                     700

tca gaa aga tac acc cca tca tct cgg cag gcc aac caa gaa gaa ggc      2161
Ser Glu Arg Tyr Thr Pro Ser Ser Arg Gln Ala Asn Gln Glu Glu Gly
705                     710                     715                 720

aaa gag tgg ctg cga tcg cat tcc act ggc ggg ctg cag gat act ggc      2209
Lys Glu Trp Leu Arg Ser His Ser Thr Gly Gly Leu Gln Asp Thr Gly
                    725                     730                 735

aac cag tct ccc ttg gtc tcc cct tct gcc atg tca tcg tca gcc acc      2257
Asn Gln Ser Pro Leu Val Ser Pro Ser Ala Met Ser Ser Ser Ala Thr
                740                     745                 750

gga aaa tat cac ttt tcc aac ttg gtg agt ccc acc aac ctc tcc cag      2305
Gly Lys Tyr His Phe Ser Asn Leu Val Ser Pro Thr Asn Leu Ser Gln
            755                     760                 765

ttt aac ctg cct gca ccc agt atg atg cgc tcc agc agt atc ccc gcc      2353
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Gln Asp Ser Ser Phe Asp Leu Tyr Asp Asp Ala Gln Leu Cys Gly Ser
785                 790                 795                 800

gca act tcc ctg gag gaa agg cca cgg gcc gtt agc cac tcc ggc tca        2449
Ala Thr Ser Leu Glu Glu Arg Pro Arg Ala Val Ser His Ser Gly Ser
                805                 810                 815

ttc aga gac agc atg gag gaa gtt cat ggc tct tca ctg tca ttg gtc        2497
Phe Arg Asp Ser Met Glu Glu Val His Gly Ser Ser Leu Ser Leu Val
            820                 825                 830

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Ser Ser Thr Ser Ser Leu Tyr Ser Thr Ala Glu Glu Lys Ala His Ser
            835                 840                 845

gag caa atc cat aag cta cgg aga gaa ctg gtt gcc tcc cag gag aaa        2593
Glu Gln Ile His Lys Leu Arg Arg Glu Leu Val Ala Ser Gln Glu Lys
    850                 855                 860

gtc gct acc ctc acg tct cag ctg tca gca aat gct cac ctt gta gca        2641
Val Ala Thr Leu Thr Ser Gln Leu Ser Ala Asn Ala His Leu Val Ala
865                 870                 875                 880

gct ttt gaa aag agt tta ggg aat atg act ggc cgt ttg caa agt cta        2689
Ala Phe Glu Lys Ser Leu Gly Asn Met Thr Gly Arg Leu Gln Ser Leu
                885                 890                 895

acc atg aca gcg gaa caa aag gaa tct gag ctt atc gaa ctg cgg gaa        2737
Thr Met Thr Ala Glu Gln Lys Glu Ser Glu Leu Ile Glu Leu Arg Glu
                900                 905                 910

acc att gaa atg ttg aag gcc cag aac tct gct gcc caa gca gcc att        2785
Thr Ile Glu Met Leu Lys Ala Gln Asn Ser Ala Ala Gln Ala Ala Ile
            915                 920                 925

cag gga gca ctg aat ggc cca gac cac cct ccc aaa gat ctc cgc atc        2833
Gln Gly Ala Leu Asn Gly Pro Asp His Pro Pro Lys Asp Leu Arg Ile
    930                 935                 940

aga aga cag cac tcc tct gaa agt gtt tct agt atc aac agc gca acg        2881
Arg Arg Gln His Ser Ser Glu Ser Val Ser Ser Ile Asn Ser Ala Thr
945                 950                 955                 960

agc cat tcc agc att ggc agt ggt aat gat gct gac tcc aag aaa            2926
Ser His Ser Ser Ile Gly Ser Gly Asn Asp Ala Asp Ser Lys Lys
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Thr Trp Arg Leu Gly Gln Ala Cys Pro Arg Leu Gln Ala Gly Asp Ala
        35              40              45


Pro Ser Met Gly Ala Gly Tyr Ser Arg Ser Gly Thr Ser Arg Phe Ile
    50              55              60


His Thr Asp Pro Ser Arg Phe Met Tyr Thr Thr Pro Leu Arg Arg Ala
65              70              75              80


Ala Val Ser Arg Leu Gly Asn Met Ser Gln Ile Asp Met Ser Glu Lys
            85              90              95


Ala Ser Ser Asp Leu Asp Val Ser Ser Glu Val Asp Val Gly Gly Tyr
            100             105             110


Met Ser Asp Gly Asp Ile Leu Gly Lys Ser Leu Arg Ala Asp Asp Ile
        115             120             125


Asn Ser Gly Tyr Met Thr Asp Gly Gly Leu Asn Leu Tyr Thr Arg Ser
    130             135             140


Leu Asn Arg Val Pro Asp Thr Ala Thr Ser Arg Asp Val Ile Gln Arg
145             150             155             160


Gly Val His Asp Val Thr Val Asp Ala Asp Ser Trp Asp Asp Ser Ser
            165             170             175


Ser Val Ser Ser Gly Leu Ser Asp Thr Leu Asp Asn Ile Ser Thr Asp
        180             185             190


Asp Leu Asn Thr Thr Ser Ser Ile Ser Ser Tyr Ser Asn Ile Thr Val
        195             200             205


Pro Ser Arg Lys Asn Thr Gln Leu Lys Thr Asp Ala Glu Lys Arg Ser
    210             215             220


Thr Thr Asp Glu Thr Trp Asp Ser Pro Glu Glu Leu Lys Lys Ala Glu
225             230             235             240


Gly Asp Cys Asp Ser His Gly Asp Gly Ala Ala Lys Trp Lys Gly Ala
            245             250             255


Thr Ser Gly Leu Ala Glu Asp Ser Glu Lys Thr Gly Gln Lys Ala Ser
        260             265             270
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    290   295   300

Lys Thr Pro Gly Lys Thr Asp Asp Ala Lys Ala Ser Glu Lys Gly Lys
305   310   315   320

Thr Pro Leu Lys Gly Ser Ser Leu Gln Arg Ser Pro Ser Asp Ala Gly
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Lys Ser Ser Gly Asp Glu Gly Lys Lys Pro Pro Ser Gly Ile Gly Arg
          340   345   350

Ser Thr Ala Ser Ser Ser Phe Gly Tyr Lys Lys Pro Ser Gly Val Gly
          355   360   365

Ala Ser Thr Met Ile Thr Ser Ser Gly Ala Thr Ile Thr Ser Gly Ser
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385   390   395   400

Asn Ala Gly Arg Lys Thr Ser Leu Asp Gly Ser Gln Asn Gln Asp Asp
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Val Val Leu His Val Ser Ser Lys Thr Thr Leu Gln Tyr Arg Ser Leu
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Pro Arg Pro Ser Lys Ser Ser Thr Ser Gly Ile Pro Gly Arg Gly Gly
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His Arg Ser Ser Thr Ser Ser Ile Asp Ser Asn Val Ser Ser Lys Ser
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Ala Gly Ala Thr Thr Ser Lys Leu Arg Glu Pro Thr Lys Ile Gly Ser
465   470   475   480

Gly Arg Ser Ser Pro Val Thr Val Asn Gln Thr Asp Lys Glu Lys Glu
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Lys Val Ala Val Ser Asp Ser Glu Ser Val Ser Leu Ser Gly Ser Pro
          500   505   510

Lys Ser Ser Pro Thr Ser Ala Ser Ala Cys Gly Thr Gln Gly Leu Arg
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Gln Pro Gly Ser Lys Tyr Pro Asp Ile Ala Ser Pro Thr Phe Arg Arg
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Leu Phe Gly Ala Lys Ala Gly Gly Lys Ser Ala Ser Ala Pro Asn Thr
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Glu Gly Ala Lys Ser Ser Ser Val Val Leu Ser Pro Ser Thr Ser Leu
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Ala Arg Gln Gly Ser Leu Glu Ser Pro Ser Ser Gly Thr Gly Ser Met
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Gly Ser Ala Gly Gly Leu Ser Gly Ser Ser Ser Pro Leu Phe Asn Lys
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Pro Ser Asp Leu Thr Thr Asp Val Ile Ser Leu Ser His Ser Leu Ala
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Ser Ser Pro Ala Ser Val His Ser Phe Thr Ser Gly Gly Leu Val Trp
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Ala Ala Asn Leu Ser Ser Ser Ser Ala Gly Ser Lys Asp Thr Pro Ser
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Tyr Gln Ser Met Thr Ser Leu His Thr Ser Ser Glu Ser Ile Asp Leu
           660   665   670

Pro Leu Ser His His Gly Ser Leu Ser Gly Leu Thr Thr Gly Thr His
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Glu Val Gln Ser Leu Leu Met Arg Thr Gly Ser Val Arg Ser Thr Leu
      690   695   700

Ser Glu Arg Tyr Thr Pro Ser Ser Arg Gln Ala Asn Gln Glu Glu Gly
705   710   715   720

Lys Glu Trp Leu Arg Ser His Ser Thr Gly Gly Leu Gln Asp Thr Gly
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Asn Gln Ser Pro Leu Val Ser Pro Ser Ala Met Ser Ser Ser Ala Thr
           740   745   750

Gly Lys Tyr His Phe Ser Asn Leu Val Ser Pro Thr Asn Leu Ser Gln
        755   760   765

Phe Asn Leu Pro Ala Pro Ser Met Met Arg Ser Ser Ser Ile Pro Ala

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                                    770   775   780

Gln Asp Ser Ser Phe Asp Leu Tyr Asp Asp Ala Gln Leu Cys Gly Ser
785   790   795   800

Ala Thr Ser Leu Glu Glu Arg Pro Arg Ala Val Ser His Ser Gly Ser
                805   810   815

Phe Arg Asp Ser Met Glu Glu Val His Gly Ser Ser Leu Ser Leu Val
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Ser Ser Thr Ser Ser Leu Tyr Ser Thr Ala Glu Glu Lys Ala His Ser
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Glu Gln Ile His Lys Leu Arg Arg Glu Leu Val Ala Ser Gln Glu Lys
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Val Ala Thr Leu Thr Ser Gln Leu Ser Ala Asn Ala His Leu Val Ala
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Ala Phe Glu Lys Ser Leu Gly Asn Met Thr Gly Arg Leu Gln Ser Leu
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Thr Met Thr Ala Glu Gln Lys Glu Ser Glu Leu Ile Glu Leu Arg Glu
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Thr Ile Glu Met Leu Lys Ala Gln Asn Ser Ala Ala Gln Ala Ala Ile
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Gln Gly Ala Leu Asn Gly Pro Asp His Pro Pro Lys Asp Leu Arg Ile
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Arg Arg Gln His Ser Ser Glu Ser Val Ser Ser Ile Asn Ser Ala Thr
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tatggtcttt ccatgggaag atacaaacca atccataagt tgtccagcaa tatccaatat     2040

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cgc cct atc gct ccc cgg ctt ccc tgc tct ttc ctt ttt ccc ggc ttc   96
Arg Pro Ile Ala Pro Arg Leu Pro Cys Ser Phe Leu Phe Pro Gly Phe
                20   25   30

ctt cct cgc gtt tct ttc ccc tgc gcc ctc ggc ttg cct ctc tcc ctc   144
Leu Pro Arg Val Ser Phe Pro Cys Ala Leu Gly Leu Pro Leu Ser Leu
            35   40   45

ctc cct cgc tct ctc ccc ctt ctc tcc cct tct tcc tcg gtt tct tcc   192
Leu Pro Arg Ser Leu Pro Leu Leu Ser Pro Ser Ser Ser Val Ser Ser
    50   55   60

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gtc ctc tct ctc ccc ctc ctc ctc ccc cgc ctc ctc ctc ctg cgc tcc      240
Val Leu Ser Leu Pro Leu Leu Leu Pro Arg Leu Leu Leu Leu Arg Ser
65              70              75              80

cgc ccc ctg ccc cct ccc ccc gtg cct gca gac gcg cgg atc gtc cat      288
Arg Pro Leu Pro Pro Pro Pro Val Pro Ala Asp Ala Arg Ile Val His
        85              90              95

gcg ctc ctc gcg ggc aga atg ctg ggc agc agc gtc aag agc gtg cag      336
Ala Leu Leu Ala Gly Arg Met Leu Gly Ser Ser Val Lys Ser Val Gln
        100             105             110

ccc gag gtg gag ctg agc agc ggc ggc ggc gac gag ggc gcg gac gaa      384
Pro Glu Val Glu Leu Ser Ser Gly Gly Gly Asp Glu Gly Ala Asp Glu
        115             120             125

ccg cgg ggc gcc ggc agg aag gcg gca gcg gcg gac ggc aga ggc atg      432
Pro Arg Gly Ala Gly Arg Lys Ala Ala Ala Ala Asp Gly Arg Gly Met
        130             135             140

ctg ccc aag cgc gcc aag gcg ccc ggc ggc ggc ggc ggc atg gcc aag      480
Leu Pro Lys Arg Ala Lys Ala Pro Gly Gly Gly Gly Gly Met Ala Lys
145             150             155             160

gcc agc gcg gct gag ctg aag gtc ttc aag tcc ggc agc gtg gac agc      528
Ala Ser Ala Ala Glu Leu Lys Val Phe Lys Ser Gly Ser Val Asp Ser
        165             170             175

cgt gtc ccc ggc ggg ccg ccc gcc tcc aac ctg cgc aag cag aag tca      576
Arg Val Pro Gly Gly Pro Pro Ala Ser Asn Leu Arg Lys Gln Lys Ser
        180             185             190

ctc acc aac ctc tct ttt ctc acg gac tcc gag aaa aag ctg cag ctt      624
Leu Thr Asn Leu Ser Phe Leu Thr Asp Ser Glu Lys Lys Leu Gln Leu
        195             200             205

tat gag ccc gaa tgg agc gac gat atg gcc aag gcg ccc aaa ggc tta      672
Tyr Glu Pro Glu Trp Ser Asp Asp Met Ala Lys Ala Pro Lys Gly Leu
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ggc aag gtg ggg tcc aag ggc cgt gaa gct ccg ctg atg tcc aag acg      720
Gly Lys Val Gly Ser Lys Gly Arg Glu Ala Pro Leu Met Ser Lys Thr
225             230             235             240

ctg tcc aag tcg gag cac tcg ctc ttc cag gcc aag ggc agc ccg gcg      768
Leu Ser Lys Ser Glu His Ser Leu Phe Gln Ala Lys Gly Ser Pro Ala
        245             250             255

ggc ggc gcc aag acc ccc ctg gct ccg ctc gcg ccc aac ctg gga aag      816
Gly Gly Ala Lys Thr Pro Leu Ala Pro Leu Ala Pro Asn Leu Gly Lys
        260             265             270

ccg agc cgg atc cct cga gga ccc tat gcg gag gtc aag ccg ctc agc      864
Pro Ser Arg Ile Pro Arg Gly Pro Tyr Ala Glu Val Lys Pro Leu Ser
        275             280             285

aag gcg cct gaa gcg gcc gtg agc gaa gat ggc aaa tcg gac gac gag      912
Lys Ala Pro Glu Ala Ala Val Ser Glu Asp Gly Lys Ser Asp Asp Glu
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Leu Leu Ser Ser Lys Ala Lys Ala Gln Lys Ser Ser Gly Pro Val Pro
305             310             315             320
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tct gcc aag ggc cag gag gag cgc gcc ttc ctc aag gtg gac ccc gag       1008
Ser Ala Lys Gly Gln Glu Glu Arg Ala Phe Leu Lys Val Asp Pro Glu
                325             330             335

ctg gtg gtg acc gtg ctg gga gac ctg gag cag ctg ctc ttc agc cag       1056
Leu Val Val Thr Val Leu Gly Asp Leu Glu Gln Leu Leu Phe Ser Gln
                340             345             350

atg ctg gac cca gag tcc cag aga aag agg aca gtg cag aat gtc ctg       1104
Met Leu Asp Pro Glu Ser Gln Arg Lys Arg Thr Val Gln Asn Val Leu
            355             360             365

gat ctc cgg cag aac ctg gaa gag acc atg tcc agc ctg cga ggg tcc       1152
Asp Leu Arg Gln Asn Leu Glu Glu Thr Met Ser Ser Leu Arg Gly Ser
            370             375             380

cag gtg act cac agc tcc ctg gag atg acc tgc tac gac agc gat gat       1200
Gln Val Thr His Ser Ser Leu Glu Met Thr Cys Tyr Asp Ser Asp Asp
385             390             395             400

gcc aac cca cgc agc gtg tcc agc ctc tcc aac cgc tcg tac cct ctg       1248
Ala Asn Pro Arg Ser Val Ser Ser Leu Ser Asn Arg Ser Tyr Pro Leu
                405             410             415

tca tgg cgc tat ggc cag tcc agt ccg cgg ctg cag gct ggt gac gcg       1296
Ser Trp Arg Tyr Gly Gln Ser Ser Pro Arg Leu Gln Ala Gly Asp Ala
                420             425             430

ccc tct gtg ggt ggg agc tgc cgc tcg gag ggg acg ccc gcc tgg tac       1344
Pro Ser Val Gly Gly Ser Cys Arg Ser Glu Gly Thr Pro Ala Trp Tyr
                435             440             445

atg cac ggc gaa cgg gcc cac tac tcc cac acc atg ccc atg cgc agc       1392
Met His Gly Glu Arg Ala His Tyr Ser His Thr Met Pro Met Arg Ser
            450             455             460

ccc agc aag ctc agc cat atc tcc cgc ctg gag ctg gtc gaa tcc ctg       1440
Pro Ser Lys Leu Ser His Ile Ser Arg Leu Glu Leu Val Glu Ser Leu
465             470             475             480

gac tcg gat gag gtg gac ctc aag tcc ggc tac atg agc gac agt gac       1488
Asp Ser Asp Glu Val Asp Leu Lys Ser Gly Tyr Met Ser Asp Ser Asp
                485             490             495

ctc atg ggc aag acc atg acg gag gat gat gac atc act acc ggc tgg       1536
Leu Met Gly Lys Thr Met Thr Glu Asp Asp Asp Ile Thr Thr Gly Trp
                500             505             510

gat gaa agc agc tcc atc agt agt gga ctc agc gat gcc tca gac aat       1584
Asp Glu Ser Ser Ser Ile Ser Ser Gly Leu Ser Asp Ala Ser Asp Asn
            515             520             525

ctc agt tca gaa gaa ttc aat gcc agc tcc tca ctc aac tcc ctc cca       1632
Leu Ser Ser Glu Glu Phe Asn Ala Ser Ser Ser Leu Asn Ser Leu Pro
            530             535             540

agt act ccc act gct tct cgc agg aac tca aca ata gtg cta cgc aca       1680
Ser Thr Pro Thr Ala Ser Arg Arg Asn Ser Thr Ile Val Leu Arg Thr
545             550             555             560

gac tca gag aag cgc tca ctg gca gaa agt ggg ctg agc tgg ttt agt       1728
Asp Ser Glu Lys Arg Ser Leu Ala Glu Ser Gly Leu Ser Trp Phe Ser
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                                   565                       570                             575

gaa tca gag gag aaa gcc cct aaa aaa ctg gag tac gac agt ggt agc    1776
Glu Ser Glu Glu Lys Ala Pro Lys Lys Leu Glu Tyr Asp Ser Gly Ser
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ctg aag atg gaa cct ggg act tct aag tgg cgg agg gag cgg cct gag    1824
Leu Lys Met Glu Pro Gly Thr Ser Lys Trp Arg Arg Glu Arg Pro Glu
            595                 600                 605

agc tgt gat gat tca tcc aag ggt gga gaa ctg aaa aag ccc atc agc    1872
Ser Cys Asp Asp Ser Ser Lys Gly Gly Glu Leu Lys Lys Pro Ile Ser
        610                 615                 620

ctg ggc cac cct ggt tcc ctg aag aag ggc aag acc cca cct gtg gct    1920
Leu Gly His Pro Gly Ser Leu Lys Lys Gly Lys Thr Pro Pro Val Ala
625                 630                 635                 640

gta act tcc ccc atc act cac aca gcc cag agt gcc ctc aaa gtc gca    1968
Val Thr Ser Pro Ile Thr His Thr Ala Gln Ser Ala Leu Lys Val Ala
                645                 650                 655

ggc aaa cct gag ggc aaa gct aca gac aag ggt aag ctt gca gtg aag    2016
Gly Lys Pro Glu Gly Lys Ala Thr Asp Lys Gly Lys Leu Ala Val Lys
            660                 665                 670

aat act ggg ctc caa cgc tcc tcc tct gat gct ggt cgg gac cgc ctg    2064
Asn Thr Gly Leu Gln Arg Ser Ser Ser Asp Ala Gly Arg Asp Arg Leu
            675                 680                 685

agt gat gct aag aag ccc ccc tcg ggc att gct cgc ccc tcc act tcg    2112
Ser Asp Ala Lys Lys Pro Pro Ser Gly Ile Ala Arg Pro Ser Thr Ser
        690                 695                 700

gga tcc ttt ggc tac aag aag cct cct cct gcc aca ggc aca gcc act    2160
Gly Ser Phe Gly Tyr Lys Lys Pro Pro Pro Ala Thr Gly Thr Ala Thr
705                 710                 715                 720

gtc atg caa act ggt ggt tca gcc act ctc agc aag atc cag aag tcc    2208
Val Met Gln Thr Gly Gly Ser Ala Thr Leu Ser Lys Ile Gln Lys Ser
                725                 730                 735

tca ggc atc cct gtc aag cca gta aat ggg cgc aag act agc tta gat    2256
Ser Gly Ile Pro Val Lys Pro Val Asn Gly Arg Lys Thr Ser Leu Asp
            740                 745                 750

gtt tcc aac agt gca gag cca gga ttc ctg gct cct gga gcc cgt tct    2304
Val Ser Asn Ser Ala Glu Pro Gly Phe Leu Ala Pro Gly Ala Arg Ser
            755                 760                 765

aac atc cag tac cgc agc ctg ccc cgg cca gcc aag tca agt tct atg    2352
Asn Ile Gln Tyr Arg Ser Leu Pro Arg Pro Ala Lys Ser Ser Ser Met
        770                 775                 780

agc gtg acc ggc ggg cgg ggt gga cct cgc cct gtg agc agc agc att    2400
Ser Val Thr Gly Gly Arg Gly Gly Pro Arg Pro Val Ser Ser Ser Ile
785                 790                 795                 800

gac ccc agt ctc ctc agc acc aag cag gga ggc ctt acg cct tcc aga    2448
Asp Pro Ser Leu Leu Ser Thr Lys Gln Gly Gly Leu Thr Pro Ser Arg
            805                 810                 815

ctg aag gag cct acc aag gta gcc agt ggg cgg acc act cca gcc cct    2496
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                                   Leu Lys Glu Pro Thr Lys Val Ala Ser Gly Arg Thr Thr Pro Ala Pro
                                       820                 825                 830

gtc aat cag aca gat cgg gaa aag gag aag gcc aaa gcc aag gca gtg        2544
Val Asn Gln Thr Asp Arg Glu Lys Glu Lys Ala Lys Ala Lys Ala Val
        835                 840                 845

gcc ttg gac tca gac aac atc tcc ttg aag agt att ggc tcc cca gaa        2592
Ala Leu Asp Ser Asp Asn Ile Ser Leu Lys Ser Ile Gly Ser Pro Glu
        850                 855                 860

agt act ccc aag aac caa gca agc cac ccc aca gcc acc aag ctg gca        2640
Ser Thr Pro Lys Asn Gln Ala Ser His Pro Thr Ala Thr Lys Leu Ala
865                 870                 875                 880

gag ctg cca cca acc cct ctc agg gcc aca gcg aag agc ttt gtc aaa        2688
Glu Leu Pro Pro Thr Pro Leu Arg Ala Thr Ala Lys Ser Phe Val Lys
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Pro Pro Ser Leu Ala Asn Leu Asp Lys Val Asn Ser Asn Ser Leu Asp
                900                 905                 910

cta cca tca tcc agt gat acc acc cat gct tca aag gtc cca gat ctg        2784
Leu Pro Ser Ser Ser Asp Thr Thr His Ala Ser Lys Val Pro Asp Leu
        915                 920                 925

cat gct aca agc tca gca tct ggg ggc cct ctc cct tcc tgc ttc acc        2832
His Ala Thr Ser Ser Ala Ser Gly Gly Pro Leu Pro Ser Cys Phe Thr
        930                 935                 940

ccc agt ccg gca ccc atc ctc aat att aac tca gcc agc ttc tcc cag        2880
Pro Ser Pro Ala Pro Ile Leu Asn Ile Asn Ser Ala Ser Phe Ser Gln
945                 950                 955                 960

ggc ctg gag cta atg agt ggt ttc agt gtg cca aaa gag acc cgc atg        2928
Gly Leu Glu Leu Met Ser Gly Phe Ser Val Pro Lys Glu Thr Arg Met
                965                 970                 975

tac ccc aaa ctc tca ggc ctg cac agg agc atg gag tcc ctc cag atg        2976
Tyr Pro Lys Leu Ser Gly Leu His Arg Ser Met Glu Ser Leu Gln Met
                980                 985                 990

cca atg agc ctc ccc agt gcc ttc  ccc agc agt act ccc  gtc ccc acc      3024
Pro Met Ser Leu Pro Ser Ala Phe  Pro Ser Ser Thr Pro  Val Pro Thr
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Pro Pro  Ala Pro Pro Ala Ala  Pro Thr Glu Glu Glu  Thr Glu Glu
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ctg act  tgg agt gga agc ccc  aga gct ggg caa ctg  gac agt aat          3114
Leu Thr  Trp Ser Gly Ser Pro  Arg Ala Gly Gln Leu  Asp Ser Asn
        1025                1030                1035

cag cgg  gat cgg aac act ctt  ccc aag aaa ggg ctc  agg tac cag          3159
Gln Arg  Asp Arg Asn Thr Leu  Pro Lys Lys Gly Leu  Arg Tyr Gln
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ctt cag  tcc cag gag gag acc  aag gag agg cga cat  tcc cat acc          3204
Leu Gln  Ser Gln Glu Glu Thr  Lys Glu Arg Arg His  Ser His Thr
        1055                1060                1065
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Ile Gly  Gly Leu Pro Glu Ser  Asp Asp Gln Ser Glu  Leu Pro Ser
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ccc cct  gca ctt ccc atg tct  ctg agt gca aag ggc  caa ctt acc        3294
Pro Pro  Ala Leu Pro Met Ser  Leu Ser Ala Lys Gly  Gln Leu Thr
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aac ata  gtg agt ccc act gcg  gcc acc acg cca aga  atc acc cgc        3339
Asn Ile  Val Ser Pro Thr Ala  Ala Thr Thr Pro Arg  Ile Thr Arg
    1100             1105              1110

tcc aac  agc atc ccc acc cac  gag gcg gcc ttc gag  ctg tac agc        3384
Ser Asn  Ser Ile Pro Thr His  Glu Ala Ala Phe Glu  Leu Tyr Ser
    1115             1120              1125

ggc tcc  caa atg ggg agc acc  ctg tcc ctg gcc gag  aga ccc aag        3429
Gly Ser  Gln Met Gly Ser Thr  Leu Ser Leu Ala Glu  Arg Pro Lys
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gga atg  att cgg tca gga tcc  ttc cga gac ccc acg  gac gat gtt        3474
Gly Met  Ile Arg Ser Gly Ser  Phe Arg Asp Pro Thr  Asp Asp Val
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cac ggc  tca gtg ctg tcc ctg  gcc tcc agt gcc tcc  tcc acc tac        3519
His Gly  Ser Val Leu Ser Leu  Ala Ser Ser Ala Ser  Ser Thr Tyr
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tcc tca  gct gag gag agg atg  caa tct gag caa atc  cgg aag ctt        3564
Ser Ser  Ala Glu Glu Arg Met  Gln Ser Glu Gln Ile  Arg Lys Leu
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cgt agg  gaa ctg gaa tca tcc  cag gaa aaa gtg gcc  acc ttg acg        3609
Arg Arg  Glu Leu Glu Ser Ser  Gln Glu Lys Val Ala  Thr Leu Thr
    1190             1195              1200

tct cag  ctt tct gcc aat gct  aat ctg gtg gct gct  ttt gag cag        3654
Ser Gln  Leu Ser Ala Asn Ala  Asn Leu Val Ala Ala  Phe Glu Gln
    1205             1210              1215

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Ser Leu  Val Asn Met Thr Ser  Arg Leu Arg His Leu  Ala Glu Thr
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gcc gag  gag aag gac act gag  ctg ctg gat ttg cga  gaa acc ata        3744
Ala Glu  Glu Lys Asp Thr Glu  Leu Leu Asp Leu Arg  Glu Thr Ile
    1235             1240              1245

gac ttt  ctg aag aaa aag aac  tct gag gcc cag gca  gtc att cag        3789
Asp Phe  Leu Lys Lys Lys Asn  Ser Glu Ala Gln Ala  Val Ile Gln
    1250             1255              1260

gga gcc  ctt aat gcc tca gaa  acc aca ccc aaa gaa  ctt cgg atc        3834
Gly Ala  Leu Asn Ala Ser Glu  Thr Thr Pro Lys Glu  Leu Arg Ile
    1265             1270              1275

aag aga  caa aac tcc tca gat  agc atc tca agc ctc  aac agc atc        3879
Lys Arg  Gln Asn Ser Ser Asp  Ser Ile Ser Ser Leu  Asn Ser Ile
    1280             1285              1290

act agc  cat tcc agc atc ggc  agc agc aag gat gct  gat gcg aaa        3924
Thr Ser  His Ser Ser Ile Gly  Ser Ser Lys Asp Ala  Asp Ala Lys
    1295             1300              1305
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aag aag aaa aaa aag agt tgg  ctt cga agt tcc ttc  aac aaa gcg        3969
Lys Lys Lys Lys Lys Ser Trp  Leu Arg Ser Ser Phe  Asn Lys Ala
    1310                1315           1320

ttc agt ata aaa aag ggg ccc  aag tca gct tcc tca  tac tcg gat        4014
Phe Ser Ile Lys Lys Gly Pro  Lys Ser Ala Ser Ser  Tyr Ser Asp
    1325                1330           1335

ata gag gag att gct aca ccc  gac tct tca gcc ccc  tca tcc ccc        4059
Ile Glu Glu Ile Ala Thr Pro  Asp Ser Ser Ala Pro  Ser Ser Pro
    1340                1345           1350

aaa cta cag cat ggt tct aca  gag act gct tca ccc  tcc atc aag        4104
Lys Leu Gln His Gly Ser Thr  Glu Thr Ala Ser Pro  Ser Ile Lys
    1355                1360           1365

tcc tcc acc tcg tcc tcc gtg  ggc act gat gtc acc  gag ggc cct        4149
Ser Ser Thr Ser Ser Ser Val  Gly Thr Asp Val Thr  Glu Gly Pro
    1370                1375           1380

gct cac cca gcc ccc cac act  agg ctg ttc cat gca  aat gag gag        4194
Ala His Pro Ala Pro His Thr  Arg Leu Phe His Ala  Asn Glu Glu
    1385                1390           1395

gag gag cca gag aag aag gag  gta tcg gag ctg cgc  tct gag cta        4239
Glu Glu Pro Glu Lys Lys Glu  Val Ser Glu Leu Arg  Ser Glu Leu
    1400                1405           1410

tgg gag aag gaa atg aag ctt  aca gac atc cgc ttg  gag gcc ctc        4284
Trp Glu Lys Glu Met Lys Leu  Thr Asp Ile Arg Leu  Glu Ala Leu
    1415                1420           1425

aac tct gcc cac caa ctg gat  cag ctt cgg gag acc  atg cac aac        4329
Asn Ser Ala His Gln Leu Asp  Gln Leu Arg Glu Thr  Met His Asn
    1430                1435           1440

atg cag ttg gag gtg gac ctg  ctg gaa gca gag aat  gac cga ctg        4374
Met Gln Leu Glu Val Asp Leu  Leu Glu Ala Glu Asn  Asp Arg Leu
    1445                1450           1455

aag gta gcc cca ggc ccc tca  tca ggc tcc act cca  ggg cag gtc        4419
Lys Val Ala Pro Gly Pro Ser  Ser Gly Ser Thr Pro  Gly Gln Val
    1460                1465           1470

cct gga tca tct gca tta tct  tcc cca cgc cgc tcc  cta ggc ctg        4464
Pro Gly Ser Ser Ala Leu Ser  Ser Pro Arg Arg Ser  Leu Gly Leu
    1475                1480           1485

gca ctc acc cat tcc ttc ggc  ccc agt ctt gca gac  aca gac ctg        4509
Ala Leu Thr His Ser Phe Gly  Pro Ser Leu Ala Asp  Thr Asp Leu
    1490                1495           1500

tca ccc atg gat ggc atc agt  act tgt ggt cca aag  gag gaa gtg        4554
Ser Pro Met Asp Gly Ile Ser  Thr Cys Gly Pro Lys  Glu Glu Val
    1505                1510           1515

acc ctc cgg gtg gtg gtg agg  atg ccc ccg cag cac  atc atc aaa        4599
Thr Leu Arg Val Val Val Arg  Met Pro Pro Gln His  Ile Ile Lys
    1520                1525           1530

ggg gac ttg aag cag cag gaa  ttc ttc ctg ggc tgt  agc aag gtc        4644
Gly Asp Leu Lys Gln Gln Glu  Phe Phe Leu Gly Cys  Ser Lys Val
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agt gga aaa gtt gac tgg aag atg ctg gat gaa gct gtt ttc caa        4689
Ser Gly Lys Val Asp Trp Lys Met Leu Asp Glu Ala Val Phe Gln
          1550                    1555                        1560

gtg ttc aag gac tat att tct aaa atg gac cca gcc tct acc ctg        4734
Val Phe Lys Asp Tyr Ile Ser Lys Met Asp Pro Ala Ser Thr Leu
          1565                    1570                        1575

gga cta agc act gag tcc atc cat ggc tac agc atc agc cac gtg        4779
Gly Leu Ser Thr Glu Ser Ile His Gly Tyr Ser Ile Ser His Val
          1580                    1585                        1590

aaa cga gtg ttg gat gca gag ccc ccc gag atg cct cct tgc cgt        4824
Lys Arg Val Leu Asp Ala Glu Pro Pro Glu Met Pro Pro Cys Arg
          1595                    1600                        1605

cga ggt gtc aat aac ata tca gtc tcc ctc aaa ggt ctg aag gag        4869
Arg Gly Val Asn Asn Ile Ser Val Ser Leu Lys Gly Leu Lys Glu
          1610                    1615                        1620

aaa tgc gtc gac agc ctg gtg ttc gag acg ctg atc ccc aag ccg        4914
Lys Cys Val Asp Ser Leu Val Phe Glu Thr Leu Ile Pro Lys Pro
          1625                    1630                        1635

atg atg cag cac tac ata agc ctc ctg ctg aag cac cgg cgc ctc        4959
Met Met Gln His Tyr Ile Ser Leu Leu Leu Lys His Arg Arg Leu
          1640                    1645                        1650

gtc ctc tcg ggc ccc agc ggc acg ggc aag acc tac ctg acc aat        5004
Val Leu Ser Gly Pro Ser Gly Thr Gly Lys Thr Tyr Leu Thr Asn
          1655                    1660                        1665

cgc ttg gcc gag tac ctg gtg gag cgc tct ggc cgt gag gtc aca        5049
Arg Leu Ala Glu Tyr Leu Val Glu Arg Ser Gly Arg Glu Val Thr
          1670                    1675                        1680

gag ggc atc gtc agc acc ttc aac atg cac cag cag tct tgc aag        5094
Glu Gly Ile Val Ser Thr Phe Asn Met His Gln Gln Ser Cys Lys
          1685                    1690                        1695

gat ctg caa ctg tat ctt tcc aac cta gcc aac cag ata gac cgg        5139
Asp Leu Gln Leu Tyr Leu Ser Asn Leu Ala Asn Gln Ile Asp Arg
          1700                    1705                        1710

gaa aca gga att ggg gat gtg ccc ctg gtg att cta ttg gat gac        5184
Glu Thr Gly Ile Gly Asp Val Pro Leu Val Ile Leu Leu Asp Asp
          1715                    1720                        1725

ctg agt gaa gca ggc tcc atc agt gag ttg gtc aat ggg gcc ctc        5229
Leu Ser Glu Ala Gly Ser Ile Ser Glu Leu Val Asn Gly Ala Leu
          1730                    1735                        1740

acc tgc aag tat cat aaa tgt ccc tat att ata ggt acc acc aat        5274
Thr Cys Lys Tyr His Lys Cys Pro Tyr Ile Ile Gly Thr Thr Asn
          1745                    1750                        1755

cag cct gta aaa atg aca ccc aac cat ggc ttt cac ttg agc ttc        5319
Gln Pro Val Lys Met Thr Pro Asn His Gly Phe His Leu Ser Phe
          1760                    1765                        1770

agg atg ttg acc ttc tcc aac aac gtg gag cca gcc aat ggc ttc        5364
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Arg Met  Leu Thr Phe Ser Asn  Asn Val Glu Pro Ala  Asn Gly Phe
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ctg gtt  cgt tac ctg agg agg  aag ctg gta gag tca  gac agc gac        5409
Leu Val  Arg Tyr Leu Arg Arg  Lys Leu Val Glu Ser  Asp Ser Asp
    1790                 1795               1800

atc aat  gcc aac aag gaa gag  ctg ctt cgg gtg ctc  gac tgg gta        5454
Ile Asn  Ala Asn Lys Glu Glu  Leu Leu Arg Val Leu  Asp Trp Val
    1805                 1810               1815

ccc aag  ctg tgg tat cat ctc  cac acc ttc ctt gag  aag cac agc        5499
Pro Lys  Leu Trp Tyr His Leu  His Thr Phe Leu Glu  Lys His Ser
    1820                 1825               1830

acc tca  gac ttc ctc atc ggc  cct tgc ttc ttt ctg  tcg tgt ccc        5544
Thr Ser  Asp Phe Leu Ile Gly  Pro Cys Phe Phe Leu  Ser Cys Pro
    1835                 1840               1845

att ggc  att gag gac ttc cgg  acc tgg ttc att gac  ctg tgg aac        5589
Ile Gly  Ile Glu Asp Phe Arg  Thr Trp Phe Ile Asp  Leu Trp Asn
    1850                 1855               1860

aac tct  atc att ccc tat cta  cag gaa gga gcc aag  gat ggg ata        5634
Asn Ser  Ile Ile Pro Tyr Leu  Gln Glu Gly Ala Lys  Asp Gly Ile
    1865                 1870               1875

aag gtc  cat gga cag aaa gct  gct tgg gag gac cca  gtg gaa tgg        5679
Lys Val  His Gly Gln Lys Ala  Ala Trp Glu Asp Pro  Val Glu Trp
    1880                 1885               1890

gtc cgg  gac aca ctt ccc tgg  cca tca gcc caa caa  gac caa tca        5724
Val Arg  Asp Thr Leu Pro Trp  Pro Ser Ala Gln Gln  Asp Gln Ser
    1895                 1900               1905

aag ctg  tac cac ctg ccc cca  ccc acc gtg ggc cct  cac agc att        5769
Lys Leu  Tyr His Leu Pro Pro  Pro Thr Val Gly Pro  His Ser Ile
    1910                 1915               1920

gcc tca  cct ccc gag gat agg  aca gtc aaa gac agc  acc cca agt        5814
Ala Ser  Pro Pro Glu Asp Arg  Thr Val Lys Asp Ser  Thr Pro Ser
    1925                 1930               1935

tct ctg  gac tca gat cct ctg  atg gcc atg ctg ctg  aaa ctt caa        5859
Ser Leu  Asp Ser Asp Pro Leu  Met Ala Met Leu Leu  Lys Leu Gln
    1940                 1945               1950

gaa gct  gcc aac tac att gag  tct cca gat cga gaa  acc atc ctg        5904
Glu Ala  Ala Asn Tyr Ile Glu  Ser Pro Asp Arg Glu  Thr Ile Leu
    1955                 1960               1965

gac ccc  aac ctt cag gca aca  ctt taagggttcg gcaatcactg             5948
Asp Pro  Asn Leu Gln Ala Thr  Leu
    1970                 1975
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tcacccccgg acagcagaac gctggcatca gctatcttag ctcctcctct cccctctcct   6008

ctttcagagc actggctctc cagccccagg aggagaacag gagggaggag gagatgaaag   6068

aggagggaca ggttcttggt gctgtacctt tgagaacttc ctaggaagga atggtggggt   6128

ggcgtttggg aacttgtgcc ccctaaacac atttactggc ctcctctaat gactttgggg   6188

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aaaagatgat tctgggtctt tcccttgact tcttgtttca attacaaact cctgggcttt    6248

ctggggaggg gttcagaaaa catcaaaaca ctgcagcagt tcctaaatga ttctcacaag    6308

caaccctgag agagacagtc ttgtgaggga gatctggggg aggcaggaag ctcctcagat    6368

tttctcacag acccttccca attccatcac cactgccaac aactcctccc ccagagatct    6428

ggctggagcc cagaaaaaga agcatgtggt ttaaaaaatg tttaaatcaa tctgtaaaag    6488

gtaaaaatga aaaacaaaaa caagcaaaca aacaaaaaac aatggaaaag atgaagctgg    6548

agagagagga accagttgcc aaggtagaga gctgcccgct cctgccctct ggatgacata    6608

ggggacatca acaagacggc tgccaacctg agaagtcacc aaaccacaaa aataacctta    6668

cagccttcag ggaaagacta ccagctctgt ctttctaccc tctaatttaa caatgcataa    6728

gagtcaataa accctacttt tttaaaaaaa aaaaaaaaag                          6768
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Leu Pro Arg Val Ser Phe Pro Cys Ala Leu Gly Leu Pro Leu Ser Leu
        35   40   45

Leu Pro Arg Ser Leu Pro Leu Leu Ser Pro Ser Ser Ser Val Ser Ser
    50   55   60

Val Leu Ser Leu Pro Leu Leu Leu Pro Arg Leu Leu Leu Leu Arg Ser
65   70   75   80

Arg Pro Leu Pro Pro Pro Pro Val Pro Ala Asp Ala Arg Ile Val His
                85   90   95

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Ala Leu Leu Ala Gly Arg Met Leu Gly Ser Ser Val Lys Ser Val Gln
          100   105   110

Pro Glu Val Glu Leu Ser Ser Gly Gly Asp Glu Gly Ala Asp Glu
          115   120   125

Pro Arg Gly Ala Gly Arg Lys Ala Ala Ala Ala Asp Gly Arg Gly Met
     130   135   140

Leu Pro Lys Arg Ala Lys Ala Pro Gly Gly Gly Gly Gly Met Ala Lys
145   150   155   160

Ala Ser Ala Ala Glu Leu Lys Val Phe Lys Ser Gly Ser Val Asp Ser
               165   170   175

Arg Val Pro Gly Gly Pro Pro Ala Ser Asn Leu Arg Lys Gln Lys Ser
          180   185   190

Leu Thr Asn Leu Ser Phe Leu Thr Asp Ser Glu Lys Lys Leu Gln Leu
          195   200   205

Tyr Glu Pro Glu Trp Ser Asp Asp Met Ala Lys Ala Pro Lys Gly Leu
     210   215   220

Gly Lys Val Gly Ser Lys Gly Arg Glu Ala Pro Leu Met Ser Lys Thr
225   230   235   240

Leu Ser Lys Ser Glu His Ser Leu Phe Gln Ala Lys Gly Ser Pro Ala
               245   250   255

Gly Gly Ala Lys Thr Pro Leu Ala Pro Leu Ala Pro Asn Leu Gly Lys
          260   265   270

Pro Ser Arg Ile Pro Arg Gly Pro Tyr Ala Glu Val Lys Pro Leu Ser
          275   280   285

Lys Ala Pro Glu Ala Ala Val Ser Glu Asp Gly Lys Ser Asp Asp Glu
     290   295   300

Leu Leu Ser Ser Lys Ala Lys Ala Gln Lys Ser Ser Gly Pro Val Pro
305   310   315   320

Ser Ala Lys Gly Gln Glu Glu Arg Ala Phe Leu Lys Val Asp Pro Glu
          325   330   335

Leu Val Val Thr Val Leu Gly Asp Leu Glu Gln Leu Leu Phe Ser Gln
          340   345   350

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Met Leu Asp Pro Glu Ser Gln Arg Lys Arg Thr Val Gln Asn Val Leu
     355   360   365

Asp Leu Arg Gln Asn Leu Glu Glu Thr Met Ser Ser Leu Arg Gly Ser
     370   375   380

Gln Val Thr His Ser Ser Leu Glu Met Thr Cys Tyr Asp Ser Asp Asp
385   390   395   400

Ala Asn Pro Arg Ser Val Ser Ser Leu Ser Asn Arg Ser Tyr Pro Leu
          405   410   415

Ser Trp Arg Tyr Gly Gln Ser Ser Pro Arg Leu Gln Ala Gly Asp Ala
          420   425   430

Pro Ser Val Gly Gly Ser Cys Arg Ser Glu Gly Thr Pro Ala Trp Tyr
          435   440   445

Met His Gly Glu Arg Ala His Tyr Ser His Thr Met Pro Met Arg Ser
     450   455   460

Pro Ser Lys Leu Ser His Ile Ser Arg Leu Glu Leu Val Glu Ser Leu
465   470   475   480

Asp Ser Asp Glu Val Asp Leu Lys Ser Gly Tyr Met Ser Asp Ser Asp
          485   490   495

Leu Met Gly Lys Thr Met Thr Glu Asp Asp Ile Thr Thr Gly Trp
          500   505   510

Asp Glu Ser Ser Ser Ile Ser Ser Gly Leu Ser Asp Ala Ser Asp Asn
          515   520   525

Leu Ser Ser Glu Glu Phe Asn Ala Ser Ser Ser Leu Asn Ser Leu Pro
     530   535   540

Ser Thr Pro Thr Ala Ser Arg Arg Asn Ser Thr Ile Val Leu Arg Thr
545   550   555   560

Asp Ser Glu Lys Arg Ser Leu Ala Glu Ser Gly Leu Ser Trp Phe Ser
          565   570   575

Glu Ser Glu Glu Lys Ala Pro Lys Lys Leu Glu Tyr Asp Ser Gly Ser
          580   585   590

Leu Lys Met Glu Pro Gly Thr Ser Lys Trp Arg Arg Glu Arg Pro Glu
     595   600   605

Ser Cys Asp Asp Ser Ser Lys Gly Gly Glu Leu Lys Lys Pro Ile Ser
    610   615   620

Leu Gly His Pro Gly Ser Leu Lys Lys Gly Lys Thr Pro Pro Val Ala
625   630   635   640

Val Thr Ser Pro Ile Thr His Thr Ala Gln Ser Ala Leu Lys Val Ala
            645   650   655

Gly Lys Pro Glu Gly Lys Ala Thr Asp Lys Gly Lys Leu Ala Val Lys
          660   665   670

Asn Thr Gly Leu Gln Arg Ser Ser Ser Asp Ala Gly Arg Asp Arg Leu
      675   680   685

Ser Asp Ala Lys Lys Pro Pro Ser Gly Ile Ala Arg Pro Ser Thr Ser
    690   695   700

Gly Ser Phe Gly Tyr Lys Lys Pro Pro Pro Ala Thr Gly Thr Ala Thr
705   710   715   720

Val Met Gln Thr Gly Gly Ser Ala Thr Leu Ser Lys Ile Gln Lys Ser
            725   730   735

Ser Gly Ile Pro Val Lys Pro Val Asn Gly Arg Lys Thr Ser Leu Asp
          740   745   750

Val Ser Asn Ser Ala Glu Pro Gly Phe Leu Ala Pro Gly Ala Arg Ser
      755   760   765

Asn Ile Gln Tyr Arg Ser Leu Pro Arg Pro Ala Lys Ser Ser Ser Met
    770   775   780

Ser Val Thr Gly Gly Arg Gly Gly Pro Arg Pro Val Ser Ser Ser Ile
785   790   795   800

Asp Pro Ser Leu Leu Ser Thr Lys Gln Gly Gly Leu Thr Pro Ser Arg
            805   810   815

Leu Lys Glu Pro Thr Lys Val Ala Ser Gly Arg Thr Thr Pro Ala Pro
          820   825   830

Val Asn Gln Thr Asp Arg Glu Lys Glu Lys Ala Lys Ala Lys Ala Val
      835   840   845

Ala Leu Asp Ser Asp Asn Ile Ser Leu Lys Ser Ile Gly Ser Pro Glu

850   855   860

Ser Thr Pro Lys Asn Gln Ala Ser His Pro Thr Ala Thr Lys Leu Ala
865   870   875   880

Glu Leu Pro Pro Thr Pro Leu Arg Ala Thr Ala Lys Ser Phe Val Lys
                885   890   895

Pro Pro Ser Leu Ala Asn Leu Asp Lys Val Asn Ser Asn Ser Leu Asp
                900   905   910

Leu Pro Ser Ser Ser Asp Thr Thr His Ala Ser Lys Val Pro Asp Leu
                915   920   925

His Ala Thr Ser Ser Ala Ser Gly Gly Pro Leu Pro Ser Cys Phe Thr
                930   935   940

Pro Ser Pro Ala Pro Ile Leu Asn Ile Asn Ser Ala Ser Phe Ser Gln
945   950   955   960

Gly Leu Glu Leu Met Ser Gly Phe Ser Val Pro Lys Glu Thr Arg Met
                965   970   975

Tyr Pro Lys Leu Ser Gly Leu His Arg Ser Met Glu Ser Leu Gln Met
                980   985   990

Pro Met Ser Leu Pro Ser Ala Phe Pro Ser Ser Thr Pro Val Pro Thr
                995   1000   1005

Pro Pro Ala Pro Pro Ala Ala Pro Thr Glu Glu Glu Thr Glu Glu
                1010   1015   1020

Leu Thr Trp Ser Gly Ser Pro Arg Ala Gly Gln Leu Asp Ser Asn
                1025   1030   1035

Gln Arg Asp Arg Asn Thr Leu Pro Lys Lys Gly Leu Arg Tyr Gln
                1040   1045   1050

Leu Gln Ser Gln Glu Glu Thr Lys Glu Arg Arg His Ser His Thr
                1055   1060   1065

Ile Gly Gly Leu Pro Glu Ser Asp Asp Gln Ser Glu Leu Pro Ser
                1070   1075   1080

Pro Pro Ala Leu Pro Met Ser Leu Ser Ala Lys Gly Gln Leu Thr
                1085   1090   1095

Asn Ile Val Ser Pro Thr Ala Ala Thr Thr Pro Arg Ile Thr Arg
    1100   1105   1110

Ser Asn Ser Ile Pro Thr His Glu Ala Ala Phe Glu Leu Tyr Ser
    1115   1120   1125

Gly Ser Gln Met Gly Ser Thr Leu Ser Leu Ala Glu Arg Pro Lys
    1130   1135   1140

Gly Met Ile Arg Ser Gly Ser Phe Arg Asp Pro Thr Asp Asp Val
    1145   1150   1155

His Gly Ser Val Leu Ser Leu Ala Ser Ser Ala Ser Ser Thr Tyr
    1160   1165   1170

Ser Ser Ala Glu Glu Arg Met Gln Ser Glu Gln Ile Arg Lys Leu
    1175   1180   1185

Arg Arg Glu Leu Glu Ser Ser Gln Glu Lys Val Ala Thr Leu Thr
    1190   1195   1200

Ser Gln Leu Ser Ala Asn Ala Asn Leu Val Ala Ala Phe Glu Gln
    1205   1210   1215

Ser Leu Val Asn Met Thr Ser Arg Leu Arg His Leu Ala Glu Thr
    1220   1225   1230

Ala Glu Glu Lys Asp Thr Glu Leu Leu Asp Leu Arg Glu Thr Ile
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Asp Phe Leu Lys Lys Lys Asn Ser Glu Ala Gln Ala Val Ile Gln
    1250   1255   1260

Gly Ala Leu Asn Ala Ser Glu Thr Thr Pro Lys Glu Leu Arg Ile
    1265   1270   1275

Lys Arg Gln Asn Ser Ser Asp Ser Ile Ser Ser Leu Asn Ser Ile
    1280   1285   1290

Thr Ser His Ser Ser Ile Gly Ser Ser Lys Asp Ala Asp Ala Lys
    1295   1300   1305

Lys Lys Lys Lys Lys Ser Trp Leu Arg Ser Ser Phe Asn Lys Ala
    1310   1315   1320

Phe Ser Ile Lys Lys Gly Pro Lys Ser Ala Ser Ser Tyr Ser Asp
    1325   1330   1335

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Ile Glu  Glu Ile Ala Thr Pro  Asp Ser Ser Ala Pro  Ser Ser Pro
    1340                 1345                 1350


Lys Leu  Gln His Gly Ser Thr  Glu Thr Ala Ser Pro  Ser Ile Lys
    1355                 1360                 1365


Ser Ser  Thr Ser Ser Ser Val  Gly Thr Asp Val Thr  Glu Gly Pro
    1370                 1375                 1380


Ala His  Pro Ala Pro His Thr  Arg Leu Phe His Ala  Asn Glu Glu
    1385                 1390                 1395


Glu Glu  Pro Glu Lys Lys Glu  Val Ser Glu Leu Arg  Ser Glu Leu
    1400                 1405                 1410


Trp Glu  Lys Glu Met Lys Leu  Thr Asp Ile Arg Leu  Glu Ala Leu
    1415                 1420                 1425


Asn Ser  Ala His Gln Leu Asp  Gln Leu Arg Glu Thr  Met His Asn
    1430                 1435                 1440


Met Gln  Leu Glu Val Asp Leu  Leu Glu Ala Glu Asn  Asp Arg Leu
    1445                 1450                 1455


Lys Val  Ala Pro Gly Pro Ser  Ser Gly Ser Thr Pro  Gly Gln Val
    1460                 1465                 1470


Pro Gly  Ser Ser Ala Leu Ser  Ser Pro Arg Arg Ser  Leu Gly Leu
    1475                 1480                 1485


Ala Leu  Thr His Ser Phe Gly  Pro Ser Leu Ala Asp  Thr Asp Leu
    1490                 1495                 1500


Ser Pro  Met Asp Gly Ile Ser  Thr Cys Gly Pro Lys  Glu Glu Val
    1505                 1510                 1515


Thr Leu  Arg Val Val Val Arg  Met Pro Pro Gln His  Ile Ile Lys
    1520                 1525                 1530


Gly Asp  Leu Lys Gln Gln Glu  Phe Phe Leu Gly Cys  Ser Lys Val
    1535                 1540                 1545


Ser Gly  Lys Val Asp Trp Lys  Met Leu Asp Glu Ala  Val Phe Gln
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Val Phe  Lys Asp Tyr Ile Ser  Lys Met Asp Pro Ala  Ser Thr Leu
    1565                 1570                 1575
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Gly Leu Ser Thr Glu Ser Ile His Gly Tyr Ser Ile Ser His Val
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Lys Arg Val Leu Asp Ala Glu Pro Pro Glu Met Pro Pro Cys Arg
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Arg Gly Val Asn Asn Ile Ser Val Ser Leu Lys Gly Leu Lys Glu
    1610   1615   1620

Lys Cys Val Asp Ser Leu Val Phe Glu Thr Leu Ile Pro Lys Pro
    1625   1630   1635

Met Met Gln His Tyr Ile Ser Leu Leu Leu Lys His Arg Arg Leu
    1640   1645   1650

Val Leu Ser Gly Pro Ser Gly Thr Gly Lys Thr Tyr Leu Thr Asn
    1655   1660   1665

Arg Leu Ala Glu Tyr Leu Val Glu Arg Ser Gly Arg Glu Val Thr
    1670   1675   1680

Glu Gly Ile Val Ser Thr Phe Asn Met His Gln Gln Ser Cys Lys
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Asp Leu Gln Leu Tyr Leu Ser Asn Leu Ala Asn Gln Ile Asp Arg
    1700   1705   1710

Glu Thr Gly Ile Gly Asp Val Pro Leu Val Ile Leu Leu Asp Asp
    1715   1720   1725

Leu Ser Glu Ala Gly Ser Ile Ser Glu Leu Val Asn Gly Ala Leu
    1730   1735   1740

Thr Cys Lys Tyr His Lys Cys Pro Tyr Ile Ile Gly Thr Thr Asn
    1745   1750   1755

Gln Pro Val Lys Met Thr Pro Asn His Gly Phe His Leu Ser Phe
    1760   1765   1770

Arg Met Leu Thr Phe Ser Asn Asn Val Glu Pro Ala Asn Gly Phe
    1775   1780   1785

Leu Val Arg Tyr Leu Arg Arg Lys Leu Val Glu Ser Asp Ser Asp
    1790   1795   1800

Ile Asn Ala Asn Lys Glu Glu Leu Leu Arg Val Leu Asp Trp Val
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      1805                    1810                    1815
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Pro Lys Leu Trp Tyr His Leu His Thr Phe Leu Glu Lys His Ser
   1820   1825   1830

Thr Ser Asp Phe Leu Ile Gly Pro Cys Phe Phe Leu Ser Cys Pro
   1835   1840   1845

Ile Gly Ile Glu Asp Phe Arg Thr Trp Phe Ile Asp Leu Trp Asn
   1850   1855   1860

Asn Ser Ile Ile Pro Tyr Leu Gln Glu Gly Ala Lys Asp Gly Ile
   1865   1870   1875

Lys Val His Gly Gln Lys Ala Ala Trp Glu Asp Pro Val Glu Trp
   1880   1885   1890

Val Arg Asp Thr Leu Pro Trp Pro Ser Ala Gln Gln Asp Gln Ser
   1895   1900   1905

Lys Leu Tyr His Leu Pro Pro Pro Thr Val Gly Pro His Ser Ile
   1910   1915   1920

Ala Ser Pro Pro Glu Asp Arg Thr Val Lys Asp Ser Thr Pro Ser
   1925   1930   1935

Ser Leu Asp Ser Asp Pro Leu Met Ala Met Leu Leu Lys Leu Gln
   1940   1945   1950

Glu Ala Ala Asn Tyr Ile Glu Ser Pro Asp Arg Glu Thr Ile Leu
   1955   1960   1965

Asp Pro Asn Leu Gln Ala Thr Leu
   1970   1975

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Gly Phe Asp Thr Gln Ile Tyr Thr Asp Trp Ala Asn His Tyr Leu Ala
         35                  40                  45

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Lys Ser Gly His Lys Arg Leu Ile Arg Asp Leu Gln Gln Asp Val Thr
         50                  55                  60

gat ggc gtc ctc ctg gcc cag att atc cag gtt gtg gca aat gaa aag          241
Asp Gly Val Leu Leu Ala Gln Ile Ile Gln Val Val Ala Asn Glu Lys
65                  70                  75                  80

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Ile Glu Asp Ile Asn Gly Cys Pro Lys Asn Arg Ser Gln Met Ile Glu
                    85                  90                  95

aac ata gat gcc tgc ttg aat ttc ctg gca gct aag gga ata aac atc          337
Asn Ile Asp Ala Cys Leu Asn Phe Leu Ala Ala Lys Gly Ile Asn Ile
             100                 105                 110

cag ggg ctg tct gca gaa gag atc agg aat gga aac ctc aag gcc att          385
Gln Gly Leu Ser Ala Glu Glu Ile Arg Asn Gly Asn Leu Lys Ala Ile
             115                 120                 125

cta ggc ctc ttc ttc agc ctc tcc cga tac aag cag cag cag cag cag          433
Leu Gly Leu Phe Phe Ser Leu Ser Arg Tyr Lys Gln Gln Gln Gln Gln
         130                 135                 140

ccc cag aag cag cac ctc tcc tca cct ctg ccg ccc gcc gta tcc cag          481
Pro Gln Lys Gln His Leu Ser Ser Pro Leu Pro Pro Ala Val Ser Gln
145                 150                 155                 160

gtg gcc ggg gcc ccc tcc cag tgc cag gct ggc acc cct cag cag cag          529
Val Ala Gly Ala Pro Ser Gln Cys Gln Ala Gly Thr Pro Gln Gln Gln
                 165                 170                 175

gtg cca gtc act ccc caa gcc ccg tgc cag cct cac cag cca gcg cca          577
Val Pro Val Thr Pro Gln Ala Pro Cys Gln Pro His Gln Pro Ala Pro
             180                 185                 190

cat cag cag tca aaa gca caa gct gaa atg cag tcc aga ctt cca ggt          625
His Gln Gln Ser Lys Ala Gln Ala Glu Met Gln Ser Arg Leu Pro Gly
             195                 200                 205

cct acc gcg agg gta tcc gct gca ggc agc gag gcc aaa aca cgc gga          673
Pro Thr Ala Arg Val Ser Ala Ala Gly Ser Glu Ala Lys Thr Arg Gly
         210                 215                 220

ggg tca act act gct aac aac cga cgc agc cag agc ttt aac aac tat          721
Gly Ser Thr Thr Ala Asn Asn Arg Arg Ser Gln Ser Phe Asn Asn Tyr
225                 230                 235                 240

gat aaa tcc aaa cca gtc acc tcc cca ccc cca ccg cca agc agc cac          769
Asp Lys Ser Lys Pro Val Thr Ser Pro Pro Pro Pro Pro Ser Ser His
             245                 250                 255

gag aaa gag cct ttg gca agt tca gcc tcc tcc cac ccc gga atg agt          817
Glu Lys Glu Pro Leu Ala Ser Ser Ala Ser Ser His Pro Gly Met Ser
         260                 265                 270
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gac aat gca cct gct tcc ttg gag agc ggc agc agc tcc acc cct act      865
Asp Asn Ala Pro Ala Ser Leu Glu Ser Gly Ser Ser Ser Thr Pro Thr
        275                 280                 285

aat tgc agt acc tcc tcg gcc atc ccg cag ccc ggt gca gcc acc aag      913
Asn Cys Ser Thr Ser Ser Ala Ile Pro Gln Pro Gly Ala Ala Thr Lys
        290                 295                 300

cct tgg cgc agc aaa tcc ctc agc gtg aag cac agt gcc acg gta tcc      961
Pro Trp Arg Ser Lys Ser Leu Ser Val Lys His Ser Ala Thr Val Ser
305                 310                 315                 320

atg ctc tcg gtc aag cct cct ggg cct gag gcc ccc agg ccc aca cct     1009
Met Leu Ser Val Lys Pro Pro Gly Pro Glu Ala Pro Arg Pro Thr Pro
                325                 330                 335

gaa gcc atg aag ccg gcc ccc aac aat cag aag tcc atg ctg gaa aag     1057
Glu Ala Met Lys Pro Ala Pro Asn Asn Gln Lys Ser Met Leu Glu Lys
                340                 345                 350

ctg aaa ctt ttc aac agt aaa ggg ggc tca aag gca ggt gag ggg ccg     1105
Leu Lys Leu Phe Asn Ser Lys Gly Gly Ser Lys Ala Gly Glu Gly Pro
        355                 360                 365

ggg tcc cgg gac aca agc tgt gag cgg ctg gag act ctg ccc agc ttc     1153
Gly Ser Arg Asp Thr Ser Cys Glu Arg Leu Glu Thr Leu Pro Ser Phe
        370                 375                 380

gaa gag agc gag gag ctg gag gcc gcc agt cgc atg ctc acc acc gtg     1201
Glu Glu Ser Glu Glu Leu Glu Ala Ala Ser Arg Met Leu Thr Thr Val
385                 390                 395                 400

ggc cct gct tcc agc agc ccc aag att gca ctc aag ggc att gcc cag     1249
Gly Pro Ala Ser Ser Ser Pro Lys Ile Ala Leu Lys Gly Ile Ala Gln
                405                 410                 415

agg act ttt agc cgg gca ctg acc aac aag aag agt tct ctg aaa ggc     1297
Arg Thr Phe Ser Arg Ala Leu Thr Asn Lys Lys Ser Ser Leu Lys Gly
                420                 425                 430

aat gag aaa gag aag gag aaa caa cag cgg gag aag gat aag gag aaa     1345
Asn Glu Lys Glu Lys Glu Lys Gln Gln Arg Glu Lys Asp Lys Glu Lys
                435                 440                 445

agc aag gac ctt gcc aag aga gcc tct gtg acg gag agg ctg gac ctc     1393
Ser Lys Asp Leu Ala Lys Arg Ala Ser Val Thr Glu Arg Leu Asp Leu
                450                 455                 460

aag gag gag cca aaa gaa gac ccc agt gga gca gct gtg ccc gag atg     1441
Lys Glu Glu Pro Lys Glu Asp Pro Ser Gly Ala Ala Val Pro Glu Met
465                 470                 475                 480

cca aaa aag tcc tcc aag att gcc agc ttc atc ccc aaa ggg ggg aag     1489
Pro Lys Lys Ser Ser Lys Ile Ala Ser Phe Ile Pro Lys Gly Gly Lys
                485                 490                 495

ctc aac agt gcc aag aag gag ccc atg gcc cct tcc cac agt gga ata     1537
Leu Asn Ser Ala Lys Lys Glu Pro Met Ala Pro Ser His Ser Gly Ile
                500                 505                 510

cca aaa cca gga atg aag agc atg ccc ggg aaa tcc cca agt gcc cca     1585
Pro Lys Pro Gly Met Lys Ser Met Pro Gly Lys Ser Pro Ser Ala Pro
                515                 520                 525
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gcg cct tcc aag gaa ggg gag cgg agc cgg agt ggg aag ctg agc tca      1633
Ala Pro Ser Lys Glu Gly Glu Arg Ser Arg Ser Gly Lys Leu Ser Ser
    530             535             540

gga ctc ccc cag cag aag ccc cag ctg gac ggc aga cac tcc agt tcc      1681
Gly Leu Pro Gln Gln Lys Pro Gln Leu Asp Gly Arg His Ser Ser Ser
545             550             555             560

tct tcc agc ctg gcg tcc tca gaa gga aaa ggc cca gga ggg acc acc      1729
Ser Ser Ser Leu Ala Ser Ser Glu Gly Lys Gly Pro Gly Gly Thr Thr
            565             570             575

ctg aac cac agc atc agc agc cag act gtc agt ggg tct gtc ggg acc      1777
Leu Asn His Ser Ile Ser Ser Gln Thr Val Ser Gly Ser Val Gly Thr
            580             585             590

acc cag acc aca gga agc aat acc gtc agt gtt cag cta cct cag ccc      1825
Thr Gln Thr Thr Gly Ser Asn Thr Val Ser Val Gln Leu Pro Gln Pro
        595             600             605

cag cag caa tac aac cat ccc aac act gcc acg gtt gca cct ttc ctg      1873
Gln Gln Gln Tyr Asn His Pro Asn Thr Ala Thr Val Ala Pro Phe Leu
    610             615             620

tac agg tct cag acg gac act gaa ggg aat gtt act gcc gag tca agc      1921
Tyr Arg Ser Gln Thr Asp Thr Glu Gly Asn Val Thr Ala Glu Ser Ser
625             630             635             640

tca aca ggt gtg agc gtg gag ccc agc cac ttc acc aag act gga cag      1969
Ser Thr Gly Val Ser Val Glu Pro Ser His Phe Thr Lys Thr Gly Gln
            645             650             655

cct gct ctg gaa gaa ctc act ggg gaa gat cct gag gct cgg cgg ctg      2017
Pro Ala Leu Glu Glu Leu Thr Gly Glu Asp Pro Glu Ala Arg Arg Leu
            660             665             670

cgg aca gtg aag aac atc gct gat ctg cgg cag aat ttg gag gaa acc      2065
Arg Thr Val Lys Asn Ile Ala Asp Leu Arg Gln Asn Leu Glu Glu Thr
            675             680             685

atg tcc agt tta agg gga act cag gtt aca cac agc aca ttg gaa acc      2113
Met Ser Ser Leu Arg Gly Thr Gln Val Thr His Ser Thr Leu Glu Thr
    690             695             700

acg ttt gac acc aat gtc acc acg gag atg agt ggc cgt agc ata ctc      2161
Thr Phe Asp Thr Asn Val Thr Thr Glu Met Ser Gly Arg Ser Ile Leu
705             710             715             720

agc ttg aca ggg agg ccc aca cct ctg tcc tgg aga ctg ggc cag tcc      2209
Ser Leu Thr Gly Arg Pro Thr Pro Leu Ser Trp Arg Leu Gly Gln Ser
            725             730             735

agc cct cgg ctc caa gca gga gac gcc ccc tca atg ggc aat ggg tat      2257
Ser Pro Arg Leu Gln Ala Gly Asp Ala Pro Ser Met Gly Asn Gly Tyr
            740             745             750

ccc cct cga gcc aac gcc agc agg ttc atc aac act gag tca ggt cgc      2305
Pro Pro Arg Ala Asn Ala Ser Arg Phe Ile Asn Thr Glu Ser Gly Arg
        755             760             765

tat gtg tac tcc gcc cct ctg aga agg cag ctg gcc tcc cgg ggc agt      2353
Tyr Val Tyr Ser Ala Pro Leu Arg Arg Gln Leu Ala Ser Arg Gly Ser
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        770                    775                    780
agt gtc tgc cac gtg gac gtc tca gac aag gca gga gat gag atg gac      2401
Ser Val Cys His Val Asp Val Ser Asp Lys Ala Gly Asp Glu Met Asp
785                    790                    795                    800

ctg gaa ggc atc agc atg gac gcc ccc ggc tac atg agc gat ggg gat      2449
Leu Glu Gly Ile Ser Met Asp Ala Pro Gly Tyr Met Ser Asp Gly Asp
                    805                    810                    815

gtt ctg agc aag aac atc cgg acc gat gac att aca agc gga tac atg      2497
Val Leu Ser Lys Asn Ile Arg Thr Asp Asp Ile Thr Ser Gly Tyr Met
                820                    825                    830

act gat ggt gga ctt ggc ctc tat acc cgt cgc ctg aac cgg ctc cct      2545
Thr Asp Gly Gly Leu Gly Leu Tyr Thr Arg Arg Leu Asn Arg Leu Pro
            835                    840                    845

gat ggg atg gct gtg gta cgg gag acc ctg caa cga aat acc tcc ctg      2593
Asp Gly Met Ala Val Val Arg Glu Thr Leu Gln Arg Asn Thr Ser Leu
        850                    855                    860

ggc ctc gga gac gct gac agc tgg gac gac agc agc tcc gtc agc agc      2641
Gly Leu Gly Asp Ala Asp Ser Trp Asp Asp Ser Ser Ser Val Ser Ser
865                    870                    875                    880

ggc atc agc gac acc ata gac aac ctc agc act gat gac atc aac acc      2689
Gly Ile Ser Asp Thr Ile Asp Asn Leu Ser Thr Asp Asp Ile Asn Thr
                    885                    890                    895

agc tcc tcc atc agc tct tat gcc aac aca cct gcc tcc tct cga aaa      2737
Ser Ser Ser Ile Ser Ser Tyr Ala Asn Thr Pro Ala Ser Ser Arg Lys
                900                    905                    910

aac ctg gat gtg cag act gat gct gag aag cac tca cag gtg gag agg      2785
Asn Leu Asp Val Gln Thr Asp Ala Glu Lys His Ser Gln Val Glu Arg
            915                    920                    925

aat tcc ctg tgg tct ggt gat gat gtc aag aaa tca gac gga ggc tca      2833
Asn Ser Leu Trp Ser Gly Asp Asp Val Lys Lys Ser Asp Gly Gly Ser
        930                    935                    940

gac agc ggc ata aaa atg gag cca ggt tcc aag tgg agg cgg aat cct      2881
Asp Ser Gly Ile Lys Met Glu Pro Gly Ser Lys Trp Arg Arg Asn Pro
945                    950                    955                    960

tct gat gtg tct gac gag tcc gac aaa agc acg tcg ggc aag aag aat      2929
Ser Asp Val Ser Asp Glu Ser Asp Lys Ser Thr Ser Gly Lys Lys Asn
                    965                    970                    975

cct gtc atc tcc cag aca ggc tca tgg cgg cga ggc atg aca gct cag      2977
Pro Val Ile Ser Gln Thr Gly Ser Trp Arg Arg Gly Met Thr Ala Gln
                980                    985                    990

gtg ggc atc acc atg cca agg acg   aag gct tca gcc ccg  gca ggc gca   3025
Val Gly Ile Thr Met Pro Arg Thr   Lys Ala Ser Ala Pro  Ala Gly Ala
            995                    1000                    1005

ctg aag   acc cca gga act gga   aaa aca gac gac gca   aag gtg tct      3070
Leu Lys   Thr Pro Gly Thr Gly   Lys Thr Asp Asp Ala   Lys Val Ser
    1010                    1015                    1020

gag aaa   gga agg ctt tct cct   aaa gcc tcc cag gtg   aag cgc tcc      3115
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Glu Lys Gly Arg Leu Ser Pro Lys Ala Ser Gln Val Lys Arg Ser
1025   1030   1035

cca tca gat gca ggc cgg agc agt ggt gac gaa tcc aaa aag ccc   3160
Pro Ser Asp Ala Gly Arg Ser Ser Gly Asp Glu Ser Lys Lys Pro
1040   1045   1050

ctc ccc agc agc tct agg aca cct act gcc aat gcc aac agc ttt   3205
Leu Pro Ser Ser Ser Arg Thr Pro Thr Ala Asn Ala Asn Ser Phe
1055   1060   1065

ggg ttc aag aag cag agt ggt tcc gcc acc ggc ctg gcc atg atc   3250
Gly Phe Lys Lys Gln Ser Gly Ser Ala Thr Gly Leu Ala Met Ile
1070   1075   1080

aca gcc agc ggg gtg act gtc acc agc agg tca gcc aca ctg ggc   3295
Thr Ala Ser Gly Val Thr Val Thr Ser Arg Ser Ala Thr Leu Gly
1085   1090   1095

aaa atc cca aag tca tct gca ctc gtc agt cgg tct gct ggt cgg   3340
Lys Ile Pro Lys Ser Ser Ala Leu Val Ser Arg Ser Ala Gly Arg
1100   1105   1110

aag tca agt atg gat ggg gct cag aat cag gat gac ggg tat cta   3385
Lys Ser Ser Met Asp Gly Ala Gln Asn Gln Asp Asp Gly Tyr Leu
1115   1120   1125

gcc cta agc tcc cgg aca aac ctt cag tac cgg agt ttg ccg agg   3430
Ala Leu Ser Ser Arg Thr Asn Leu Gln Tyr Arg Ser Leu Pro Arg
1130   1135   1140

ccc agt aag tcc aac agc cgg aac ggg gct ggg aac agg tct agc   3475
Pro Ser Lys Ser Asn Ser Arg Asn Gly Ala Gly Asn Arg Ser Ser
1145   1150   1155

acc agc agc ata gat tcc aac att agc agc aag tcc gca ggc ctg   3520
Thr Ser Ser Ile Asp Ser Asn Ile Ser Ser Lys Ser Ala Gly Leu
1160   1165   1170

cca gtg ccc aaa ctg agg gag cct tcc aaa aca gcc cta ggc agc   3565
Pro Val Pro Lys Leu Arg Glu Pro Ser Lys Thr Ala Leu Gly Ser
1175   1180   1185

tct cta cca ggt ctg gtc aac caa aca gac aag gag aaa ggc atc   3610
Ser Leu Pro Gly Leu Val Asn Gln Thr Asp Lys Glu Lys Gly Ile
1190   1195   1200

tca tca gac aac gag agt gtg gct tcc tgt aac tcg gtg aaa gtg   3655
Ser Ser Asp Asn Glu Ser Val Ala Ser Cys Asn Ser Val Lys Val
1205   1210   1215

aat ccg gca gcc cag cct gtg tcc agt ccg gct cag acc agt ctc   3700
Asn Pro Ala Ala Gln Pro Val Ser Ser Pro Ala Gln Thr Ser Leu
1220   1225   1230

cag cct gga gcc aag tac cca gat gtg gcc tct ccc aca ctc cgc   3745
Gln Pro Gly Ala Lys Tyr Pro Asp Val Ala Ser Pro Thr Leu Arg
1235   1240   1245

aga ctc ttt ggt ggg aag cct acc aag caa gtg ccc atc gcc aca   3790
Arg Leu Phe Gly Gly Lys Pro Thr Lys Gln Val Pro Ile Ala Thr
1250   1255   1260

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gct gaa aac atg aaa aat tcg gtg gtc atc tcc aat cct cat gcc      3835
Ala Glu Asn Met Lys Asn Ser Val Val Ile Ser Asn Pro His Ala
    1265                1270                1275

acc atg act cag caa ggt aac cta gac tcc ccg tca ggc agt ggc      3880
Thr Met Thr Gln Gln Gly Asn Leu Asp Ser Pro Ser Gly Ser Gly
    1280                1285                1290

gtc ctg agc agt ggg agc agc agt cct ctc tac agc aag aat gtg      3925
Val Leu Ser Ser Gly Ser Ser Ser Pro Leu Tyr Ser Lys Asn Val
    1295                1300                1305

gac ctc aac cag tct ccg cta gcc tcc agc ccc agc tca gcc cac      3970
Asp Leu Asn Gln Ser Pro Leu Ala Ser Ser Pro Ser Ser Ala His
    1310                1315                1320

tcg gcc cct tcc aac agc ctc acc tgg ggc acc aac gcc agc agc      4015
Ser Ala Pro Ser Asn Ser Leu Thr Trp Gly Thr Asn Ala Ser Ser
    1325                1330                1335

tcc tcc gca gtt agc aag gat ggc ctg ggc ttt cag tct gtc agc      4060
Ser Ser Ala Val Ser Lys Asp Gly Leu Gly Phe Gln Ser Val Ser
    1340                1345                1350

agc ctc cac acc agc tgt gag tcc atc gac atc tcc ctc agc agt      4105
Ser Leu His Thr Ser Cys Glu Ser Ile Asp Ile Ser Leu Ser Ser
    1355                1360                1365

gga ggg gtc ccc agc cac aat tct tcc act ggc ctc atc gcc tcc      4150
Gly Gly Val Pro Ser His Asn Ser Ser Thr Gly Leu Ile Ala Ser
    1370                1375                1380

tcc aag gac gac tcc ttg act ccc ttt gtc aga act aac agt gtg      4195
Ser Lys Asp Asp Ser Leu Thr Pro Phe Val Arg Thr Asn Ser Val
    1385                1390                1395

aag acc aca ctg tca gaa agc cct ctc tct tcc cct gct gct agc      4240
Lys Thr Thr Leu Ser Glu Ser Pro Leu Ser Ser Pro Ala Ala Ser
    1400                1405                1410

cct aag ttc tgc aga agt act ctg ccc agg aaa cag gac agt gac      4285
Pro Lys Phe Cys Arg Ser Thr Leu Pro Arg Lys Gln Asp Ser Asp
    1415                1420                1425

ccg cac ctt gat agg aac act ttg cct aag aaa gga ctc agg tat      4330
Pro His Leu Asp Arg Asn Thr Leu Pro Lys Lys Gly Leu Arg Tyr
    1430                1435                1440

act ccc acc tcc cag ctt cgc acg caa gaa gat gca aaa gaa tgg      4375
Thr Pro Thr Ser Gln Leu Arg Thr Gln Glu Asp Ala Lys Glu Trp
    1445                1450                1455

tta cgg tcc cat tct gca gga ggc ctt cag gac acc gct gcc aat      4420
Leu Arg Ser His Ser Ala Gly Gly Leu Gln Asp Thr Ala Ala Asn
    1460                1465                1470

tcc ccc ttt tcc tct ggc tcc agc gtg act tct ccc tcc gga aca      4465
Ser Pro Phe Ser Ser Gly Ser Ser Val Thr Ser Pro Ser Gly Thr
    1475                1480                1485

aga ttc aac ttt tcc cag ctt gcg agt ccc acc act gtc acc cag      4510
Arg Phe Asn Phe Ser Gln Leu Ala Ser Pro Thr Thr Val Thr Gln
    1490                1495                1500
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atg agc ttg tcc aac ccg acc   atg ctg agg act cac   agc ctc tcc        4555
Met Ser Leu Ser Asn Pro Thr   Met Leu Arg Thr His   Ser Leu Ser
    1505                1510                  1515

aat gct gat ggg cag tat gat   cca tac act gac agc   cgc ttc cgg        4600
Asn Ala Asp Gly Gln Tyr Asp   Pro Tyr Thr Asp Ser   Arg Phe Arg
    1520                1525                  1530

aat agc tcc atg tcc ctg gat   gag aag agc aga acc   atg agc cgt        4645
Asn Ser Ser Met Ser Leu Asp   Glu Lys Ser Arg Thr   Met Ser Arg
    1535                1540                  1545

tca ggc tca ttc cgg gat ggg   ttt gaa gaa gtt cat   gga tcc tca        4690
Ser Gly Ser Phe Arg Asp Gly   Phe Glu Glu Val His   Gly Ser Ser
    1550                1555                  1560

ctc tcc ttg gtt tcc agc aca   tcg tca gtt tat tct   aca cca gaa        4735
Leu Ser Leu Val Ser Ser Thr   Ser Ser Val Tyr Ser   Thr Pro Glu
    1565                1570                  1575

gaa aaa tgc cag tca gag att   cgc aag ctg cgg cgg   gaa ctg gat        4780
Glu Lys Cys Gln Ser Glu Ile   Arg Lys Leu Arg Arg   Glu Leu Asp
    1580                1585                  1590

gcc tcc cag gag aaa gtt tca   gct ttg acc acc cag   ctg aca gca        4825
Ala Ser Gln Glu Lys Val Ser   Ala Leu Thr Thr Gln   Leu Thr Ala
    1595                1600                  1605

aat gct cac ctt gtg gct gcc   ttt gaa cag agt ctt   ggt aac atg        4870
Asn Ala His Leu Val Ala Ala   Phe Glu Gln Ser Leu   Gly Asn Met
    1610                1615                  1620

aca atc agg ctc cag agt ctg   acc atg aca gct gag   cag aag gat        4915
Thr Ile Arg Leu Gln Ser Leu   Thr Met Thr Ala Glu   Gln Lys Asp
    1625                1630                  1635

tca gaa ctg aat gag tta aga   aaa acc att gag ctg   cta aag aaa        4960
Ser Glu Leu Asn Glu Leu Arg   Lys Thr Ile Glu Leu   Leu Lys Lys
    1640                1645                  1650

cag aac gca gct gcc cag gct   gcc att aat gga gta   att aac aca        5005
Gln Asn Ala Ala Ala Gln Ala   Ala Ile Asn Gly Val   Ile Asn Thr
    1655                1660                  1665

cct gag ctc aac tgc aaa gga   aac ggc act gcc cag   tct gca gac        5050
Pro Glu Leu Asn Cys Lys Gly   Asn Gly Thr Ala Gln   Ser Ala Asp
    1670                1675                  1680

ctc cgc atc cgc agg cag cac   tcc tca gac agc gtc   tcc agc atc        5095
Leu Arg Ile Arg Arg Gln His   Ser Ser Asp Ser Val   Ser Ser Ile
    1685                1690                  1695

aac agt gcc acc agc cac tcc   agt gtg ggc agc aac   ata gag agt        5140
Asn Ser Ala Thr Ser His Ser   Ser Val Gly Ser Asn   Ile Glu Ser
    1700                1705                  1710

gac tca aag aag aag aag agg   aag aac tgg gtc aat   gag tta cgc        5185
Asp Ser Lys Lys Lys Lys Arg   Lys Asn Trp Val Asn   Glu Leu Arg
    1715                1720                  1725

agc tcc ttc aag caa gct ttc   ggg aag aag aag tcc   cca aaa tct        5230
Ser Ser Phe Lys Gln Ala Phe   Gly Lys Lys Lys Ser   Pro Lys Ser
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         1730                         1735                        1740

gcg tcc tct cat tca gat att  gag gag atg acg gat  tct tct ttg      5275
Ala Ser Ser His Ser Asp Ile  Glu Glu Met Thr Asp  Ser Ser Leu
    1745                         1750                   1755

cct tcc tca cca aag tta cca  cac aat ggg tcc aca  ggt tcc acc      5320
Pro Ser Ser Pro Lys Leu Pro  His Asn Gly Ser Thr  Gly Ser Thr
    1760                         1765                   1770

cca ctg ctg agg aat tct cac  tcc aac tct cta att  tca gaa tgc      5365
Pro Leu Leu Arg Asn Ser His  Ser Asn Ser Leu Ile  Ser Glu Cys
    1775                         1780                   1785

atg gat agt gaa gct gag acc  gtc atg cag ctc cga  aat gag tta      5410
Met Asp Ser Glu Ala Glu Thr  Val Met Gln Leu Arg  Asn Glu Leu
    1790                         1795                   1800

aga gac aag gag atg aag ctg  aca gat atc cgc tta  gaa gct ctc      5455
Arg Asp Lys Glu Met Lys Leu  Thr Asp Ile Arg Leu  Glu Ala Leu
    1805                         1810                   1815

agt tct gcc cac cag ctg gac  cag ctc cgg gag gcc  atg aac agg      5500
Ser Ser Ala His Gln Leu Asp  Gln Leu Arg Glu Ala  Met Asn Arg
    1820                         1825                   1830

atg cag agt gaa ata gag aag  ctg aaa gct gag aat  gat cgg ctg      5545
Met Gln Ser Glu Ile Glu Lys  Leu Lys Ala Glu Asn  Asp Arg Leu
    1835                         1840                   1845

aag tca gag tct caa ggc agt  ggc tgc agc cgg gct  cct tcc caa      5590
Lys Ser Glu Ser Gln Gly Ser  Gly Cys Ser Arg Ala  Pro Ser Gln
    1850                         1855                   1860

gtg tcc atc tct gcc tcc ccg  agg cag tcc atg ggc  ctc tcc cag      5635
Val Ser Ile Ser Ala Ser Pro  Arg Gln Ser Met Gly  Leu Ser Gln
    1865                         1870                   1875

cac agc ttg aac ctc act gag  tca acc agc ctg gac  atg ttg ctg      5680
His Ser Leu Asn Leu Thr Glu  Ser Thr Ser Leu Asp  Met Leu Leu
    1880                         1885                   1890

gat gac act ggt gaa tgc tcg  gct cgg aag gaa gga  ggc agg cat      5725
Asp Asp Thr Gly Glu Cys Ser  Ala Arg Lys Glu Gly  Gly Arg His
    1895                         1900                   1905

gtt aag ata gtt gtc agc ttt  cag gag gaa atg aag  tgg aag gag      5770
Val Lys Ile Val Val Ser Phe  Gln Glu Glu Met Lys  Trp Lys Glu
    1910                         1915                   1920

gat tcc aga cca cat ctc ttt  ctt att ggc tgc att  gga gtt agt      5815
Asp Ser Arg Pro His Leu Phe  Leu Ile Gly Cys Ile  Gly Val Ser
    1925                         1930                   1935

ggc aag acg aag tgg gat gtg  ctc gat ggg gtg gtt  aga cgg ctg      5860
Gly Lys Thr Lys Trp Asp Val  Leu Asp Gly Val Val  Arg Arg Leu
    1940                         1945                   1950

ttc aaa gaa tac atc att cat  gtc gac cca gtg agt  cag cta ggg      5905
Phe Lys Glu Tyr Ile Ile His  Val Asp Pro Val Ser  Gln Leu Gly
    1955                         1960                   1965

ctg aat tca gac agc gtt ctt  ggc tac agc att gga  gaa atc aag      5950
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Leu Asn  Ser Asp Ser Val Leu  Gly Tyr Ser Ile Gly  Glu Ile Lys
    1970                 1975                 1980

cgc agc  aac act tcc gaa aca  ccg gag ctg ctt cct  tgt ggc tat      5995
Arg Ser  Asn Thr Ser Glu Thr  Pro Glu Leu Leu Pro  Cys Gly Tyr
    1985                 1990                 1995

ctg gtt  gga gag aac acg acc  atc tca gtg act gtg  aaa ggg ctc      6040
Leu Val  Gly Glu Asn Thr Thr  Ile Ser Val Thr Val  Lys Gly Leu
    2000                 2005                 2010

gca gaa  aac agc ctg gac tca  ctg gtg ttt gag tcc  ttg att ccc      6085
Ala Glu  Asn Ser Leu Asp Ser  Leu Val Phe Glu Ser  Leu Ile Pro
    2015                 2020                 2025

aag ccc  atc ctg cag cgc tac  gtc tcc ctc ctg ata  gag cac cgt      6130
Lys Pro  Ile Leu Gln Arg Tyr  Val Ser Leu Leu Ile  Glu His Arg
    2030                 2035                 2040

cgg atc  att ctc tct ggc ccc  agc ggc act ggg aaa  acc tac ctg      6175
Arg Ile  Ile Leu Ser Gly Pro  Ser Gly Thr Gly Lys  Thr Tyr Leu
    2045                 2050                 2055

gcc aac  cgg ctg tct gag tat  ata gtg ctt cga gag  gga cgg gag      6220
Ala Asn  Arg Leu Ser Glu Tyr  Ile Val Leu Arg Glu  Gly Arg Glu
    2060                 2065                 2070

ttg aca  gac ggg gtt atc gcc  acc ttt aac gtg gac  cat aag tcc      6265
Leu Thr  Asp Gly Val Ile Ala  Thr Phe Asn Val Asp  His Lys Ser
    2075                 2080                 2085

agc aag  gaa ttg cgc cag tac  ctg tcc aac ctt gct  gac cag tgc      6310
Ser Lys  Glu Leu Arg Gln Tyr  Leu Ser Asn Leu Ala  Asp Gln Cys
    2090                 2095                 2100

aac agt  gag aac aat gct gtg  gac atg ccc ctc gtc  atc atc ctg      6355
Asn Ser  Glu Asn Asn Ala Val  Asp Met Pro Leu Val  Ile Ile Leu
    2105                 2110                 2115

gac aac  cta cac cac gtg agc  tct ctg ggc gag atc  ttc aat ggg      6400
Asp Asn  Leu His His Val Ser  Ser Leu Gly Glu Ile  Phe Asn Gly
    2120                 2125                 2130

ctg ctc  aac tgc aag tac cac  aaa tgc cct tac ata  att ggc aca      6445
Leu Leu  Asn Cys Lys Tyr His  Lys Cys Pro Tyr Ile  Ile Gly Thr
    2135                 2140                 2145

atg aac  cag gct acc tct tcg  act ccc aac ctg cag  ctt cac cat      6490
Met Asn  Gln Ala Thr Ser Ser  Thr Pro Asn Leu Gln  Leu His His
    2150                 2155                 2160

aac ttc  aga tgg gtg ctt tgt  gcc aac cac acg gag  cct gtg aag      6535
Asn Phe  Arg Trp Val Leu Cys  Ala Asn His Thr Glu  Pro Val Lys
    2165                 2170                 2175

ggt ttc  ctt ggc cga ttc ctg  agg agg aag ctc atg  gaa aca gag      6580
Gly Phe  Leu Gly Arg Phe Leu  Arg Arg Lys Leu Met  Glu Thr Glu
    2180                 2185                 2190

atc agt  ggg cgg gtg cgc aat  atg gag ctg gta aaa  atc att gac      6625
Ile Ser  Gly Arg Val Arg Asn  Met Glu Leu Val Lys  Ile Ile Asp
    2195                 2200                 2205
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tgg att ccc aag gtc tgg cat  cac ctc aac cgc ttc  ctg gag gct      6670
Trp Ile Pro Lys Val Trp His  His Leu Asn Arg Phe  Leu Glu Ala
2210                     2215                2220

cac agt tcc tcg gac gtc acc  atc ggc ccc cgg ctc  ttc ctg tca      6715
His Ser Ser Ser Asp Val Thr  Ile Gly Pro Arg Leu  Phe Leu Ser
2225                     2230                2235

tgc ccc atc gat gtg gac ggc  tcg aga gtg tgg ttc  acc gac ttg      6760
Cys Pro Ile Asp Val Asp Gly  Ser Arg Val Trp Phe  Thr Asp Leu
2240                     2245                2250

tgg aac tat tcc att atc ccc  tat ctc ctg gaa gcc  gtc aga gaa      6805
Trp Asn Tyr Ser Ile Ile Pro  Tyr Leu Leu Glu Ala  Val Arg Glu
2255                     2260                2265

gga ctc cag ctc tat gga agg  cgc gcc ccc tgg gag  gat cct gcc      6850
Gly Leu Gln Leu Tyr Gly Arg  Arg Ala Pro Trp Glu  Asp Pro Ala
2270                     2275                2280

aag tgg gtg atg gac aca tat  cca tgg gca gcc agc  cca caa cag      6895
Lys Trp Val Met Asp Thr Tyr  Pro Trp Ala Ala Ser  Pro Gln Gln
2285                     2290                2295

cac gag tgg cct ccc ctg ctg  cag tta cgg cct gag  gat gtc ggc      6940
His Glu Trp Pro Pro Leu Leu  Gln Leu Arg Pro Glu  Asp Val Gly
2300                     2305                2310

ttc gac ggc tac tcc atg cct  cgg gag gga tcg aca  agc aag cag      6985
Phe Asp Gly Tyr Ser Met Pro  Arg Glu Gly Ser Thr  Ser Lys Gln
2315                     2320                2325

atg ccc ccc agt gat gct gaa  ggt gac ccg ctg atg  aac atg ctg      7030
Met Pro Pro Ser Asp Ala Glu  Gly Asp Pro Leu Met  Asn Met Leu
2330                     2335                2340

atg agg ctg cag gag gca gcc  aac tac tcc agc ccc  cag agc tat      7075
Met Arg Leu Gln Glu Ala Ala  Asn Tyr Ser Ser Pro  Gln Ser Tyr
2345                     2350                2355

gac agc gac tcc aac agc aac  agc cat cac gat gac  atc ttg gac      7120
Asp Ser Asp Ser Asn Ser Asn  Ser His His Asp Asp  Ile Leu Asp
2360                     2365                2370

tcc tct ttg gag tcc act ctg  tgacaggggc ccggagccca gcgccctcct     7171
Ser Ser Leu Glu Ser Thr Leu
2375                     2380

cttctcctca ccgcattcca cctgcatccc ccacatcacc ctgaagatga cttcctgagc    7231

cagcccccag ccacagcctt agagctgcgg gaacaccgag accccccgtc cttcagcctc    7291

gacctgggtg caggcatccc gggccagctg cctgcggacc gcttccttcc acagcgagaa    7351

ctgcactacc ttctgttgta ctttaattat tgttttgcct tgttgctgtg acctccctaa    7411

gacactgaag atacttctcg ggaaaggatc atcgccgttg aaatgaaaag agagacagag    7471

agagaaaaaa aaaagagaac ccacatgaag ctctgaaacc aaacagcatc ctgccatgag    7531

cttcccagag acagaagaga ctggagcaaa gtcggaaaca cagagaagca cggcttcccc    7591

tcagcacaga ccctccagac tgggtctcag agccgtgcca cccacccctcc cacacagccg    7651
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gccacaggga gaactggtgc taaccagggt gcttgctttg gtcacgttca acgcactaca   7711

gagctacgac acaggggaac cttaggagca aataaaccgt gctttcatgt tttttaaaaa   7771

aaaaaaaaaa aa   7783

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1   5   10   15

Pro Ala Gly Glu Gly Leu Pro Leu Arg Lys Ser Gly Ser Val Glu Asn
                20   25   30

Gly Phe Asp Thr Gln Ile Tyr Thr Asp Trp Ala Asn His Tyr Leu Ala
            35   40   45

Lys Ser Gly His Lys Arg Leu Ile Arg Asp Leu Gln Gln Asp Val Thr
        50   55   60

Asp Gly Val Leu Leu Ala Gln Ile Ile Gln Val Val Ala Asn Glu Lys
65   70   75   80

Ile Glu Asp Ile Asn Gly Cys Pro Lys Asn Arg Ser Gln Met Ile Glu
                85   90   95

Asn Ile Asp Ala Cys Leu Asn Phe Leu Ala Ala Lys Gly Ile Asn Ile
            100   105   110

Gln Gly Leu Ser Ala Glu Glu Ile Arg Asn Gly Asn Leu Lys Ala Ile
        115   120   125

Leu Gly Leu Phe Phe Ser Leu Ser Arg Tyr Lys Gln Gln Gln Gln Gln
    130   135   140

Pro Gln Lys Gln His Leu Ser Ser Pro Leu Pro Pro Ala Val Ser Gln
145   150   155   160

Val Ala Gly Ala Pro Ser Gln Cys Gln Ala Gly Thr Pro Gln Gln Gln
                165   170   175

Val Pro Val Thr Pro Gln Ala Pro Cys Gln Pro His Gln Pro Ala Pro
                180   185   190

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His Gln Gln Ser Lys Ala Gln Ala Glu Met Gln Ser Arg Leu Pro Gly
    195   200   205

Pro Thr Ala Arg Val Ser Ala Ala Gly Ser Glu Ala Lys Thr Arg Gly
    210   215   220

Gly Ser Thr Thr Ala Asn Asn Arg Arg Ser Gln Ser Phe Asn Asn Tyr
225   230   235   240

Asp Lys Ser Lys Pro Val Thr Ser Pro Pro Pro Pro Ser Ser His
           245   250   255

Glu Lys Glu Pro Leu Ala Ser Ser Ala Ser Ser His Pro Gly Met Ser
          260   265   270

Asp Asn Ala Pro Ala Ser Leu Glu Ser Gly Ser Ser Ser Thr Pro Thr
        275   280   285

Asn Cys Ser Thr Ser Ser Ala Ile Pro Gln Pro Gly Ala Ala Thr Lys
    290   295   300

Pro Trp Arg Ser Lys Ser Leu Ser Val Lys His Ser Ala Thr Val Ser
305   310   315   320

Met Leu Ser Val Lys Pro Pro Gly Pro Glu Ala Pro Arg Pro Thr Pro
        325   330   335

Glu Ala Met Lys Pro Ala Pro Asn Asn Gln Lys Ser Met Leu Glu Lys
        340   345   350

Leu Lys Leu Phe Asn Ser Lys Gly Gly Ser Lys Ala Gly Glu Gly Pro
        355   360   365

Gly Ser Arg Asp Thr Ser Cys Glu Arg Leu Glu Thr Leu Pro Ser Phe
    370   375   380

Glu Glu Ser Glu Glu Leu Glu Ala Ala Ser Arg Met Leu Thr Thr Val
385   390   395   400

Gly Pro Ala Ser Ser Ser Pro Lys Ile Ala Leu Lys Gly Ile Ala Gln
        405   410   415

Arg Thr Phe Ser Arg Ala Leu Thr Asn Lys Lys Ser Ser Leu Lys Gly
        420   425   430

Asn Glu Lys Glu Lys Glu Lys Gln Gln Arg Glu Lys Asp Lys Glu Lys
        435   440   445

Ser Lys Asp Leu Ala Lys Arg Ala Ser Val Thr Glu Arg Leu Asp Leu
    450   455   460

Lys Glu Glu Pro Lys Glu Asp Pro Ser Gly Ala Ala Val Pro Glu Met
465   470   475   480

Pro Lys Lys Ser Ser Lys Ile Ala Ser Phe Ile Pro Lys Gly Gly Lys
         485   490   495

Leu Asn Ser Ala Lys Lys Glu Pro Met Ala Pro Ser His Ser Gly Ile
        500   505   510

Pro Lys Pro Gly Met Lys Ser Met Pro Gly Lys Ser Pro Ser Ala Pro
      515   520   525

Ala Pro Ser Lys Glu Gly Glu Arg Ser Arg Ser Gly Lys Leu Ser Ser
    530   535   540

Gly Leu Pro Gln Gln Lys Pro Gln Leu Asp Gly Arg His Ser Ser Ser
545   550   555   560

Ser Ser Ser Leu Ala Ser Ser Glu Gly Lys Gly Pro Gly Gly Thr Thr
        565   570   575

Leu Asn His Ser Ile Ser Ser Gln Thr Val Ser Gly Ser Val Gly Thr
        580   585   590

Thr Gln Thr Thr Gly Ser Asn Thr Val Ser Val Gln Leu Pro Gln Pro
      595   600   605

Gln Gln Gln Tyr Asn His Pro Asn Thr Ala Thr Val Ala Pro Phe Leu
    610   615   620

Tyr Arg Ser Gln Thr Asp Thr Glu Gly Asn Val Thr Ala Glu Ser Ser
625   630   635   640

Ser Thr Gly Val Ser Val Glu Pro Ser His Phe Thr Lys Thr Gly Gln
        645   650   655

Pro Ala Leu Glu Glu Leu Thr Gly Glu Asp Pro Glu Ala Arg Arg Leu
        660   665   670

Arg Thr Val Lys Asn Ile Ala Asp Leu Arg Gln Asn Leu Glu Glu Thr
      675   680   685

Met Ser Ser Leu Arg Gly Thr Gln Val Thr His Ser Thr Leu Glu Thr
    690   695   700

Thr Phe Asp Thr Asn Val Thr Thr Glu Met Ser Gly Arg Ser Ile Leu
705   710   715   720

Ser Leu Thr Gly Arg Pro Thr Pro Leu Ser Trp Arg Leu Gly Gln Ser
            725   730   735

Ser Pro Arg Leu Gln Ala Gly Asp Ala Pro Ser Met Gly Asn Gly Tyr
            740   745   750

Pro Pro Arg Ala Asn Ala Ser Arg Phe Ile Asn Thr Glu Ser Gly Arg
            755   760   765

Tyr Val Tyr Ser Ala Pro Leu Arg Arg Gln Leu Ala Ser Arg Gly Ser
    770   775   780

Ser Val Cys His Val Asp Val Ser Asp Lys Ala Gly Asp Glu Met Asp
785   790   795   800

Leu Glu Gly Ile Ser Met Asp Ala Pro Gly Tyr Met Ser Asp Gly Asp
            805   810   815

Val Leu Ser Lys Asn Ile Arg Thr Asp Asp Ile Thr Ser Gly Tyr Met
            820   825   830

Thr Asp Gly Gly Leu Gly Leu Tyr Thr Arg Arg Leu Asn Arg Leu Pro
        835   840   845

Asp Gly Met Ala Val Val Arg Glu Thr Leu Gln Arg Asn Thr Ser Leu
    850   855   860

Gly Leu Gly Asp Ala Asp Ser Trp Asp Asp Ser Ser Ser Val Ser Ser
865   870   875   880

Gly Ile Ser Asp Thr Ile Asp Asn Leu Ser Thr Asp Asp Ile Asn Thr
            885   890   895

Ser Ser Ser Ile Ser Ser Tyr Ala Asn Thr Pro Ala Ser Ser Arg Lys
            900   905   910

Asn Leu Asp Val Gln Thr Asp Ala Glu Lys His Ser Gln Val Glu Arg
        915   920   925

Asn Ser Leu Trp Ser Gly Asp Asp Val Lys Lys Ser Asp Gly Gly Ser
    930   935   940

Asp Ser Gly Ile Lys Met Glu Pro Gly Ser Lys Trp Arg Arg Asn Pro
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945   950   955   960

Ser Asp Val Ser Asp Glu Ser Asp Lys Ser Thr Ser Gly Lys Lys Asn
                     965   970   975

Pro Val Ile Ser Gln Thr Gly Ser Trp Arg Arg Gly Met Thr Ala Gln
               980   985   990

Val Gly Ile Thr Met Pro Arg Thr Lys Ala Ser Ala Pro Ala Gly Ala
          995   1000   1005

Leu Lys Thr Pro Gly Thr Gly Lys Thr Asp Asp Ala Lys Val Ser
    1010   1015   1020

Glu Lys Gly Arg Leu Ser Pro Lys Ala Ser Gln Val Lys Arg Ser
    1025   1030   1035

Pro Ser Asp Ala Gly Arg Ser Ser Gly Asp Glu Ser Lys Lys Pro
    1040   1045   1050

Leu Pro Ser Ser Ser Arg Thr Pro Thr Ala Asn Ala Asn Ser Phe
    1055   1060   1065

Gly Phe Lys Lys Gln Ser Gly Ser Ala Thr Gly Leu Ala Met Ile
    1070   1075   1080

Thr Ala Ser Gly Val Thr Val Thr Ser Arg Ser Ala Thr Leu Gly
    1085   1090   1095

Lys Ile Pro Lys Ser Ser Ala Leu Val Ser Arg Ser Ala Gly Arg
    1100   1105   1110

Lys Ser Ser Met Asp Gly Ala Gln Asn Gln Asp Asp Gly Tyr Leu
    1115   1120   1125

Ala Leu Ser Ser Arg Thr Asn Leu Gln Tyr Arg Ser Leu Pro Arg
    1130   1135   1140

Pro Ser Lys Ser Asn Ser Arg Asn Gly Ala Gly Asn Arg Ser Ser
    1145   1150   1155

Thr Ser Ser Ile Asp Ser Asn Ile Ser Ser Lys Ser Ala Gly Leu
    1160   1165   1170

Pro Val Pro Lys Leu Arg Glu Pro Ser Lys Thr Ala Leu Gly Ser
    1175   1180   1185

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```
Ser Leu  Pro Gly Leu Val Asn  Gln Thr Asp Lys Glu  Lys Gly Ile
    1190                  1195              1200
```

```
Ser Ser  Asp Asn Glu Ser Val  Ala Ser Cys Asn Ser  Val Lys Val
    1205                  1210              1215
```

```
Asn Pro  Ala Ala Gln Pro Val  Ser Ser Pro Ala Gln  Thr Ser Leu
    1220                  1225              1230
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Gln Pro  Gly Ala Lys Tyr Pro  Asp Val Ala Ser Pro  Thr Leu Arg
    1235                  1240              1245
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```
Arg Leu  Phe Gly Gly Lys Pro  Thr Lys Gln Val Pro  Ile Ala Thr
    1250                  1255              1260
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```
Ala Glu  Asn Met Lys Asn Ser  Val Val Ile Ser Asn  Pro His Ala
    1265                  1270              1275
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```
Thr Met  Thr Gln Gln Gly Asn  Leu Asp Ser Pro Ser  Gly Ser Gly
    1280                  1285              1290
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Val Leu  Ser Ser Gly Ser Ser  Ser Pro Leu Tyr Ser  Lys Asn Val
    1295                  1300              1305
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Asp Leu  Asn Gln Ser Pro Leu  Ala Ser Ser Pro Ser  Ser Ala His
    1310                  1315              1320
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Ser Ala  Pro Ser Asn Ser Leu  Thr Trp Gly Thr Asn  Ala Ser Ser
    1325                  1330              1335
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```
Ser Ser  Ala Val Ser Lys Asp  Gly Leu Gly Phe Gln  Ser Val Ser
    1340                  1345              1350
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```
Ser Leu  His Thr Ser Cys Glu  Ser Ile Asp Ile Ser  Leu Ser Ser
    1355                  1360              1365
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Gly Gly  Val Pro Ser His Asn  Ser Ser Thr Gly Leu  Ile Ala Ser
    1370                  1375              1380
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Ser Lys  Asp Asp Ser Leu Thr  Pro Phe Val Arg Thr  Asn Ser Val
    1385                  1390              1395
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Lys Thr  Thr Leu Ser Glu Ser  Pro Leu Ser Ser Pro  Ala Ala Ser
    1400                  1405              1410
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Pro Lys  Phe Cys Arg Ser Thr  Leu Pro Arg Lys Gln  Asp Ser Asp
    1415                  1420              1425
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Pro His Leu Asp Arg Asn Thr Leu Pro Lys Lys Gly Leu Arg Tyr
    1430   1435   1440

Thr Pro Thr Ser Gln Leu Arg Thr Gln Glu Asp Ala Lys Glu Trp
    1445   1450   1455

Leu Arg Ser His Ser Ala Gly Gly Leu Gln Asp Thr Ala Ala Asn
    1460   1465   1470

Ser Pro Phe Ser Ser Gly Ser Ser Val Thr Ser Pro Ser Gly Thr
    1475   1480   1485

Arg Phe Asn Phe Ser Gln Leu Ala Ser Pro Thr Thr Val Thr Gln
    1490   1495   1500

Met Ser Leu Ser Asn Pro Thr Met Leu Arg Thr His Ser Leu Ser
    1505   1510   1515

Asn Ala Asp Gly Gln Tyr Asp Pro Tyr Thr Asp Ser Arg Phe Arg
    1520   1525   1530

Asn Ser Ser Met Ser Leu Asp Glu Lys Ser Arg Thr Met Ser Arg
    1535   1540   1545

Ser Gly Ser Phe Arg Asp Gly Phe Glu Glu Val His Gly Ser Ser
    1550   1555   1560

Leu Ser Leu Val Ser Ser Thr Ser Ser Val Tyr Ser Thr Pro Glu
    1565   1570   1575

Glu Lys Cys Gln Ser Glu Ile Arg Lys Leu Arg Arg Glu Leu Asp
    1580   1585   1590

Ala Ser Gln Glu Lys Val Ser Ala Leu Thr Thr Gln Leu Thr Ala
    1595   1600   1605

Asn Ala His Leu Val Ala Ala Phe Glu Gln Ser Leu Gly Asn Met
    1610   1615   1620

Thr Ile Arg Leu Gln Ser Leu Thr Met Thr Ala Glu Gln Lys Asp
    1625   1630   1635

Ser Glu Leu Asn Glu Leu Arg Lys Thr Ile Glu Leu Leu Lys Lys
    1640   1645   1650

Gln Asn Ala Ala Ala Gln Ala Ala Ile Asn Gly Val Ile Asn Thr
    1655   1660   1665

Pro Glu Leu Asn Cys Lys Gly Asn Gly Thr Ala Gln Ser Ala Asp
    1670   1675   1680

Leu Arg Ile Arg Arg Gln His Ser Ser Asp Ser Val Ser Ser Ile
    1685   1690   1695

Asn Ser Ala Thr Ser His Ser Ser Val Gly Ser Asn Ile Glu Ser
    1700   1705   1710

Asp Ser Lys Lys Lys Lys Arg Lys Asn Trp Val Asn Glu Leu Arg
    1715   1720   1725

Ser Ser Phe Lys Gln Ala Phe Gly Lys Lys Lys Ser Pro Lys Ser
    1730   1735   1740

Ala Ser Ser His Ser Asp Ile Glu Glu Met Thr Asp Ser Ser Leu
    1745   1750   1755

Pro Ser Ser Pro Lys Leu Pro His Asn Gly Ser Thr Gly Ser Thr
    1760   1765   1770

Pro Leu Leu Arg Asn Ser His Ser Asn Ser Leu Ile Ser Glu Cys
    1775   1780   1785

Met Asp Ser Glu Ala Glu Thr Val Met Gln Leu Arg Asn Glu Leu
    1790   1795   1800

Arg Asp Lys Glu Met Lys Leu Thr Asp Ile Arg Leu Glu Ala Leu
    1805   1810   1815

Ser Ser Ala His Gln Leu Asp Gln Leu Arg Glu Ala Met Asn Arg
    1820   1825   1830

Met Gln Ser Glu Ile Glu Lys Leu Lys Ala Glu Asn Asp Arg Leu
    1835   1840   1845

Lys Ser Glu Ser Gln Gly Ser Gly Cys Ser Arg Ala Pro Ser Gln
    1850   1855   1860

Val Ser Ile Ser Ala Ser Pro Arg Gln Ser Met Gly Leu Ser Gln
    1865   1870   1875

His Ser Leu Asn Leu Thr Glu Ser Thr Ser Leu Asp Met Leu Leu
    1880   1885   1890

Asp Asp Thr Gly Glu Cys Ser Ala Arg Lys Glu Gly Gly Arg His

                1895   1900   1905

Val Lys Ile Val Val Ser Phe Gln Glu Glu Met Lys Trp Lys Glu
    1910   1915   1920

Asp Ser Arg Pro His Leu Phe Leu Ile Gly Cys Ile Gly Val Ser
    1925   1930   1935

Gly Lys Thr Lys Trp Asp Val Leu Asp Gly Val Val Arg Arg Leu
    1940   1945   1950

Phe Lys Glu Tyr Ile Ile His Val Asp Pro Val Ser Gln Leu Gly
    1955   1960   1965

Leu Asn Ser Asp Ser Val Leu Gly Tyr Ser Ile Gly Glu Ile Lys
    1970   1975   1980

Arg Ser Asn Thr Ser Glu Thr Pro Glu Leu Leu Pro Cys Gly Tyr
    1985   1990   1995

Leu Val Gly Glu Asn Thr Thr Ile Ser Val Thr Val Lys Gly Leu
    2000   2005   2010

Ala Glu Asn Ser Leu Asp Ser Leu Val Phe Glu Ser Leu Ile Pro
    2015   2020   2025

Lys Pro Ile Leu Gln Arg Tyr Val Ser Leu Leu Ile Glu His Arg
    2030   2035   2040

Arg Ile Ile Leu Ser Gly Pro Ser Gly Thr Gly Lys Thr Tyr Leu
    2045   2050   2055

Ala Asn Arg Leu Ser Glu Tyr Ile Val Leu Arg Glu Gly Arg Glu
    2060   2065   2070

Leu Thr Asp Gly Val Ile Ala Thr Phe Asn Val Asp His Lys Ser
    2075   2080   2085

Ser Lys Glu Leu Arg Gln Tyr Leu Ser Asn Leu Ala Asp Gln Cys
    2090   2095   2100

Asn Ser Glu Asn Asn Ala Val Asp Met Pro Leu Val Ile Ile Leu
    2105   2110   2115

Asp Asn Leu His His Val Ser Ser Leu Gly Glu Ile Phe Asn Gly
    2120   2125   2130

Leu Leu Asn Cys Lys Tyr His Lys Cys Pro Tyr Ile Ile Gly Thr
    2135   2140   2145

Met Asn Gln Ala Thr Ser Ser Thr Pro Asn Leu Gln Leu His His
    2150   2155   2160

Asn Phe Arg Trp Val Leu Cys Ala Asn His Thr Glu Pro Val Lys
    2165   2170   2175

Gly Phe Leu Gly Arg Phe Leu Arg Arg Lys Leu Met Glu Thr Glu
    2180   2185   2190

Ile Ser Gly Arg Val Arg Asn Met Glu Leu Val Lys Ile Ile Asp
    2195   2200   2205

Trp Ile Pro Lys Val Trp His His Leu Asn Arg Phe Leu Glu Ala
    2210   2215   2220

His Ser Ser Ser Asp Val Thr Ile Gly Pro Arg Leu Phe Leu Ser
    2225   2230   2235

Cys Pro Ile Asp Val Asp Gly Ser Arg Val Trp Phe Thr Asp Leu
    2240   2245   2250

Trp Asn Tyr Ser Ile Ile Pro Tyr Leu Leu Glu Ala Val Arg Glu
    2255   2260   2265

Gly Leu Gln Leu Tyr Gly Arg Arg Ala Pro Trp Glu Asp Pro Ala
    2270   2275   2280

Lys Trp Val Met Asp Thr Tyr Pro Trp Ala Ala Ser Pro Gln Gln
    2285   2290   2295

His Glu Trp Pro Pro Leu Leu Gln Leu Arg Pro Glu Asp Val Gly
    2300   2305   2310

Phe Asp Gly Tyr Ser Met Pro Arg Glu Gly Ser Thr Ser Lys Gln
    2315   2320   2325

Met Pro Pro Ser Asp Ala Glu Gly Asp Pro Leu Met Asn Met Leu
    2330   2335   2340

Met Arg Leu Gln Glu Ala Ala Asn Tyr Ser Ser Pro Gln Ser Tyr
    2345   2350   2355

Asp Ser Asp Ser Asn Ser Asn Ser His His Asp Asp Ile Leu Asp
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Ser Ser Leu Glu Ser Thr Leu
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Ser Arg Glu Arg Gly Gly Ser Val Pro Ser Leu Leu Gln Gly Gln Cys
1   5   10   15

ccc agc ctc agc cac act tct gat ctg cag tcc aac aga cct ttc tag   96
Pro Ser Leu Ser His Thr Ser Asp Leu Gln Ser Asn Arg Pro Phe
                20   25   30

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His Ala Lys Glu Asn Leu Gly Val Pro Gly Gly Pro Gln Ser Ser His
1   5   10   15

tgc act tgt ggc acc cac agc gag tag   75
Cys Thr Cys Gly Thr His Ser Glu
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Pro Ser Val Ser Arg Gly Asn Cys Thr Gln Ile Tyr Thr Asp Trp Ala
1   5   10   15

aat cat tac cta gcc aaa tcc ggc cac aag cgt ctc atc aag gat ctc   96
Asn His Tyr Leu Ala Lys Ser Gly His Lys Arg Leu Ile Lys Asp Leu
                20   25   30

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cag caa gat gtg aca gat ggc gtc ctc ctg gcc cag att atc cag gtt        144
Gln Gln Asp Val Thr Asp Gly Val Leu Leu Ala Gln Ile Ile Gln Val
        35              40                  45

gtg gca aat gaa aag att gaa gac atc aat ggc tgt ccg aag aac aga        192
Val Ala Asn Glu Lys Ile Glu Asp Ile Asn Gly Cys Pro Lys Asn Arg
        50              55                  60

tcc caa atg att gaa aac ata gat gcc tgc ttg aat ttc ctg gca gct        240
Ser Gln Met Ile Glu Asn Ile Asp Ala Cys Leu Asn Phe Leu Ala Ala
65              70                  75                  80

aag gga ata aac atc cag ggg ctg tct gca gaa gag atc agg aat gga        288
Lys Gly Ile Asn Ile Gln Gly Leu Ser Ala Glu Glu Ile Arg Asn Gly
                85                  90                  95

aac ctc aag gcc att cta ggc ctc ttc ttc agc ctc tcc cga tac aag        336
Asn Leu Lys Ala Ile Leu Gly Leu Phe Phe Ser Leu Ser Arg Tyr Lys
                100                 105                 110

cag cag cag cag cag ccc cag aag cag cac ctc tcc tca cct ctg ccg        384
Gln Gln Gln Gln Gln Pro Gln Lys Gln His Leu Ser Ser Pro Leu Pro
                115                 120                 125

ccc gcc gta tcc cag gtg gcc ggg gcc ccc tcc cag tgc cag gct ggc        432
Pro Ala Val Ser Gln Val Ala Gly Ala Pro Ser Gln Cys Gln Ala Gly
        130                 135                 140

acc cct cag cag cag gtg cca gtc act ccc caa gcc ccg tgc cag cct        480
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His Gln Pro
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Val Ala Asn Glu Lys Ile Glu Asp Ile Asn Gly Cys Pro Lys Asn Arg
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Ser Gln Met Ile Glu Asn Ile Asp Ala Cys Leu Asn Phe Leu Ala Ala
65   70   75   80

Lys Gly Ile Asn Ile Gln Gly Leu Ser Ala Glu Glu Ile Arg Asn Gly
                85   90   95

Asn Leu Lys Ala Ile Leu Gly Leu Phe Phe Ser Leu Ser Arg Tyr Lys
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Gln Gln Gln Gln Gln Pro Gln Lys Gln His Leu Ser Ser Pro Leu Pro
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Pro Ala Val Ser Gln Val Ala Gly Ala Pro Ser Gln Cys Gln Ala Gly
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His Gln Pro

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Phe Glu Glu Val His Gly Ser Ser Leu Ser Leu Val Ser Ser Thr Ser
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Ser Ile Tyr Ser Thr Pro Glu Glu Lys Cys Gln Ser Glu Ile Arg Lys
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Leu Arg Arg Glu Leu Asp Ala Ser Gln Glu Lys Val Ser Ala Leu Thr
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Thr Gln Leu Thr Ala Asn Ala His Leu Val Ala Ala Phe Glu Gln Ser
   65                  70                  75

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Leu Gly Asn Met Thr Ile Arg Leu Gln Ser Leu Thr Met Thr Ala Glu
80                  85                  90                  95

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Gln Lys Asp Ser Glu Leu Asn Glu Leu Arg Lys Thr Ile Glu Leu Leu
              100                 105                 110

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Thr Pro Glu Leu Asn Cys Lys Gly Asn Gly Ser Ala Arg Leu Gln Thr
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tac gca tcc gca gca aca ctc ctc cga cag tgt ctc cag tat caa tag      479
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Gln Leu Thr Ala Asn Ala His Leu Val Ala Ala Phe Glu Gln Ser Leu
65   70   75   80

Gly Asn Met Thr Ile Arg Leu Gln Ser Leu Thr Met Thr Ala Glu Gln
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Lys Asp Ser Glu Leu Asn Glu Leu Arg Lys Thr Ile Glu Leu Leu Lys
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